

FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

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EDITORIAL COMMENT.

The Mansion House Meeting.

On Monday, will take place at the Mansion House, what is probably the most important meeting ever held in this country, to discuss the many-sided problem of aerial defence. This is the meeting called by the Navy League, and over which the Lord Mayor will preside. We have called it an important event, and we think with justification, inasmuch from the terms of the official announcement which lies before us, we gather that the Lord Mayor will be supported on the platform by an assemblage of many of the most influential people in the land, including twenty members of the House of Peers, forty members of the Lower House, fifteen mayors of metropolitan boroughs, and a large number of retired military and naval officers. The resolutions to be submitted to the meeting are four in number, of which the following is the text:—

1. "In the opinion of this non-political and non-party Meeting of the Citizens of London, the Command of the Air has now become so important a factor in Naval Warfare as to render it absolutely necessary that Great Britain should forthwith take the necessary steps to achieve the Command of the Air.
2. "In view of the rapid development of aircraft for defence and the large sums provided by foreign governments for the construction of airships, aeroplanes and auxiliary equipment, the time has come when this country must undertake such measures of preparation as will tend at the earliest possible moment to give Great Britain a margin of superiority of air supremacy of two to one in airships and aeroplanes as against the next strongest naval power.

3. "That copies of the above resolutions be forwarded to His Majesty's Government with the request that they may receive their favourable consideration, and with the assurance that any steps they may take in the directions indicated will receive the warm approval of the citizens.

4. "That in the opinion of this meeting the formation of a National Aeronautical Committee to arouse and educate public opinion on the questions affecting the Aerial Defence of the Country should be inaugurated and that this Committee should be entirely non-party in character.

"And, That the Lord Mayor, for the time being, be invited to preside over this Committee and that those present at this meeting who are willing to become members of the proposed new organisation be invited to do so. That the Lord Mayor will appoint trustees, who will administer such funds as are raised with the co-operation of approved organisations for its economical and proper expenditure."

Taking the resolutions as we come to them, the first carries its own argument with it. If the command of the air has become an important factor in naval war, then it is most obviously necessary for the existence of our Empire that we should take every necessary step for making that command our own. So far as the "if" which prefaces the foregoing sentence is concerned, we had hardly thought of its existence until we read an article which appears in a recent issue of the *Daily Chronicle*, from the pen of its Naval Correspondent. Now, in speaking of the command of the air we cannot take it to mean any more or any less than a sufficient numerical superiority in aircraft of all classes. To argue upon the respective fighting value of individual craft and attempt to juggle with facts in order to delude ourselves into the belief that our handful of aircraft are so much higher in fighting value than the vastly preponderating number owned by Germany is mere futility. Yet this is the astounding proposition which the writer in the *Daily Chronicle* sets out to prove. Writing about the Mansion House meeting he says that:

"No one denies the importance of aerial navigation, or its intimate relation to the work of the Services. This is nowhere better understood than in Whitehall; and no outside agitation is required to stimulate the imagination or accelerate the action of the authorities. To clamour for a million of money is absurd. That sum and more will be expended as it is required."

That is something to the good, anyway. Later on in his article, he simply jumps with both feet upon Col. Massey and Mr. Arnold White. He says:—

"If we were to credit the excited utterances of such hot gossellers of this new revelation, the country is in dire peril because Germany has a few frail Zeppelins, and is about to add a few more. If Britain is no longer an island, what is the Fleet concentrated in Home waters for? If we have become a bit of the Continent, the Fleet has lost half its value. Hyperbole is not the language in which to deal with things of importance.

"Elsewhere we read that 'we alone, among the Great Powers, stand unprepared against attack from an army which has already helped to change the map of Europe,' and Colonel Massey, who makes the statement, adds 'especially does this apply to any naval warfare in which we may be engaged in our Home waters.' Let him read an article on aircraft in the war, recently published in the German Service *Jahrbücher*, if he wishes to know how amazingly little the aircraft accomplished in the war. What warrant is there for saying that we are any less prepared than are the Germans? The record of the Zeppelins has been one of multiplied disasters, almost unmitigated. Have the Germans any hydro-aeroplanes equal to our own? Is their Service as far developed as the British Service? Are not the new aerial stations on the East coast the very best bases for keeping an aeroplane watch over the North Sea? A new auxiliary means against invasion is placed in our hands, and the aeroplane and wireless telegraphy should silence the scaremongers."

In all seriousness, we say that this is most mischievous doctrine, preached obviously for the purpose of endeavouring to justify the Government in its policy of "wait and see." "What warrant have we that we are any less prepared than Germany?" This is very specious, but let us answer question with question. Dare any responsible Minister of the Crown, stand up in his place in Parliament and tell the country that our air fleet in being, or even in immediate contemplation, is the equal of that of Germany? That is the crucial point—not whether the Germans have paid for their experience, like sensible people, with a few accidents to airships. Nor can the question of our safety from aerial attack be decided by newspaper arguments, on the question of whether Germany has hydro-aeroplanes equal to our own. We do not base the strength of the Navy on any academic arguments about ship-for-ship superiority, but, irrespective of tonnage or gun power, the Admiralty policy is to build in the proportion of 16 to 10. That is the only safe basis on which to proceed, and to take any other is simply to delude ourselves. Aircraft will decide the issue of war in the air, and not the specious words of newspaper writers.

Coming to the second resolution, we are content to take it as it stands. Exactly what the strategical requirements of the situation are, we, as laymen, are not prepared

ROYAL FLYING CORPS.

THE following appointment was announced by the Admiralty on the 23rd ult.:

Commander F. R. Scarlett, to the "Hermes," on commissioning, to date May 7th.

The following appointment was announced by the Admiralty on the 24th ult.:

Capt. G. W. Vivian, to the "Pembroke," additional, for the "Hermes," April 25th, and for the "Hermes," in command, on commissioning (for naval air service), to date May 7th.

The following appointments were announced by the Admiralty on the 25th ult.:

Lieuts. : F. W. Bowhill, A. W. Bigsworth, J. R. B. Kennedy, D. A. Oliver, R. P. Ross, and H. D. Vernon to the "Actæon," additional, as flying officers, to be attached to the Naval Flying School, temporary, to date April 17th; F. L. M. Boothby and H. L. Woodcock, to the "Actæon," additional, for naval air-ship section, as flight commanders, to date April 15th. Engineer Lieut. E. F. Briggs, to the "Actæon," additional, for Naval Flying School, as flight commander and for machinery and overseeing duties, to date April 15th.

Assistant Paymaster J. H. Lidderdale, to the "President," additional, for the Central Flying School, and as flying officer in the first reserve naval wing, to date April 17th.

Lieut. C. E. H. Rathborne, R.M.L.I., to the "Actæon," additional, as flying officer, to be attached to the Naval Flying School, temporary, to date April 17th.

The following appointments were announced by the Admiralty on the 30th ult.:

Assistant Paymaster E. B. Parker, to the "Actæon," additional, as flying officer, to date April 17th.

Lieuts. I. T. Courtney, R.M.L.I., and G. T. Wildman Lushington, R.M.A., to the "Actæon," additional, for staff of Naval Flying School, as flight commander, with acting rank of captain, to date April 15th.

to say. What we do argue for, however, is a preponderance of numbers of aircraft over those possessed by a possible enemy—the next strongest naval power, if it be preferred that way. It is a useful thing to set a standard to work to, and we are quite content with the "two keels to one" basis as something upon which to found the campaign of activity which must be embarked upon throughout the country if the Government is to be got to move at all. Coming back to the *Daily Chronicle* article once again, we are pleased to be able to endorse one view set forth by its writer. He lays it down that the promoters of the Mansion House meeting will be wise if they refrain from advocating the acquisition of any particular means of navigating the air, and will content themselves with supporting the naval and military authorities in what they are doing. A perusal of the resolutions will show that this is precisely what the Navy League is contenting itself with. There is no laying down the law as to the proportions of one type to another—the League is asking for aircraft in the most comprehensive meaning of the term.

Resolution 4 seems to call for some remark. We are not certain that in the ordinary way we approve of the multiplication of bodies and organisations, each *prima facie* devoted to the furtherance of a common end. But in this case things are a little different. Good as the work done by existing bodies has been, it is nevertheless a fact that the public imagination hitherto has not been magnetised into active insistence. Before anything real can be achieved it is absolutely essential that the great mass of the people should be aroused to the dangers of the situation as it exists to-day; and, so far as we are able to see, to do that requires the formation of a definite organisation for the purpose, and for that end we believe the suggested National Aeronautical Committee, properly constituted, will be found to be on the right lines.

It only remains now to express the hope that Monday's meeting will be largely attended by the right kind of people, in order that it may speak with a voice which even the present Government dare not disregard.

ROYAL FLYING CORPS (MILITARY W. G.).

WAR OFFICE Summary of work for week ending April 26th —

No. 1 (Airship) Squadron. Farnborough.—On the 21st and 22nd "Beta" was out making several long flights, and the previous slight alterations were completed on the "Delta." On the 23rd and 24th, the "Beta" was in use throughout the whole day. "Delta" was given a trial flight on the 23rd, and was then taken out for a more extended trial on the 24th. "Beta" was out, making in all 10 flights, on the 25th, carrying out reconnaissance work, and also practising various experiments.

No. 2 Squadron. Montrose.—On the 17th, 18th, 19th, 21st, 22nd and 23rd, all available machines were out, several extended reconnaissances being made. The total mileage during the week amounted to 1,390 miles. The machines used were B.E.s. and M. Farmans.

No. 3 Squadron. Larkhill.—On the 19th a Maurice Farman was flown back from Oxfordshire in a very strong wind. On the 22nd all the pilots were up, and much valuable work in co-operating with artillery was performed by Major Higgins on a Henry Farman. On the 23rd there was further practice with artillery. Sergt. Bruce passed the necessary tests for his R.A.C. certificate. Capt. Allen was out trying the Bristol tractor biplane. On the 24th there was also much flying, the pilots carrying out various extended reconnaissances. During the week several new machines were delivered at Larkhill by officers of the Flying Depot. The machines used in this Squadron are B.E.s. and M. Farmans.

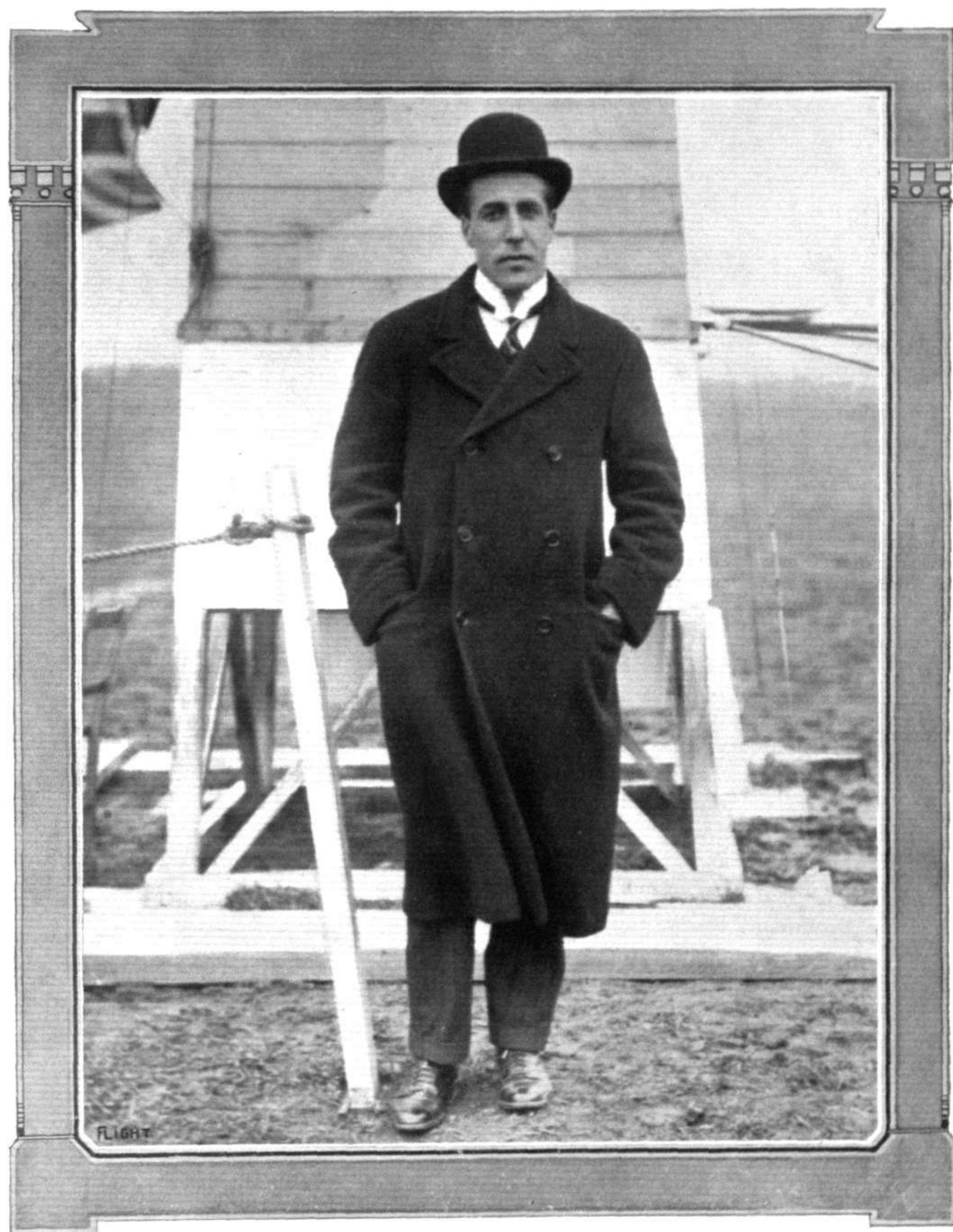
No. 4 Squadron. Farnborough.—On the 18th, 21st, 22nd, 23rd, and 24th all the Officer and N.C.O. pilots were flying, carrying out reconnaissance work, and observing the troops of the Aldershot Command at work. Some 134 flights in all were made, observers being carried in nearly every case. The machines used were B.E.s., Breguets, and Maurice Farmans.

Flying Depot.—Several machines were taken over from the R.A.F., and delivered to squadrons. Some valuable photographic experiments were carried out during the week.

MAY 3, 1913.

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MEN OF MOMENT IN THE WORLD OF FLIGHT. Pilot-Constructor.



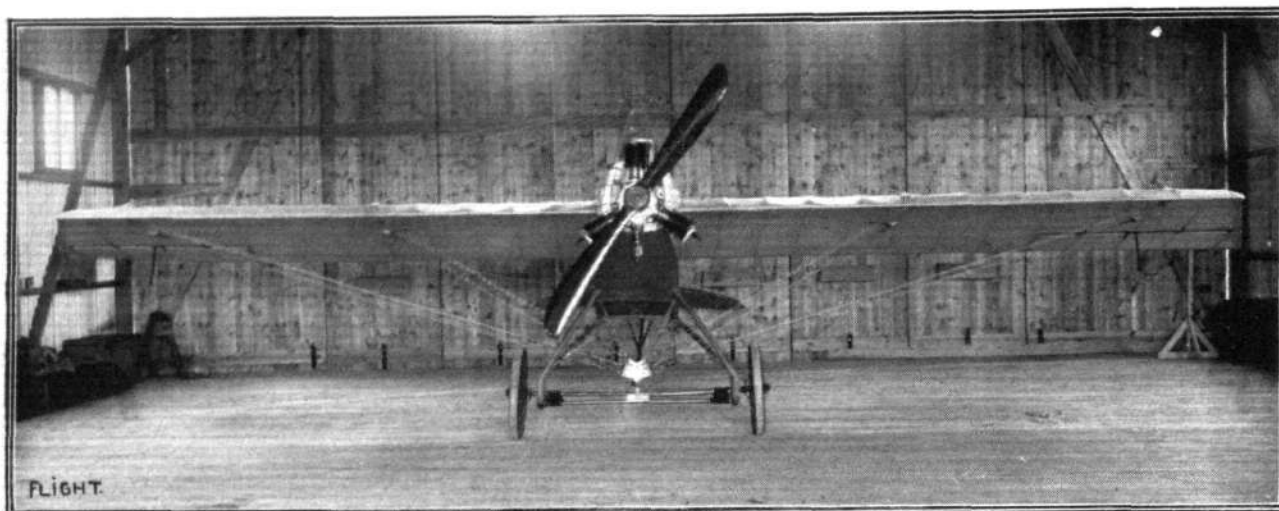
LIEUT. J. C. PORTE, Technical Director and Designer of the British Deperdussin Aeroplane Co., Ltd., who has taken an active interest in aviation from its early days both on the theoretical and practical sides of flying.

THE E.A.C. MONOPLANE.

A NEW machine has been added to the list of British built aeroplanes. The monoplane in question has been designed for the Eastbourne Aviation Co., Ltd., by Mr. E. L. Gassler, who has had considerable experience in this direction, besides being a practical engineer and

At any rate, the system has much to recommend it, as it does away with the twisting strains imposed upon the wings where the wing-warping system is employed.

From the plan view of the machine it will be seen that the two main spars, which are of rectangular section



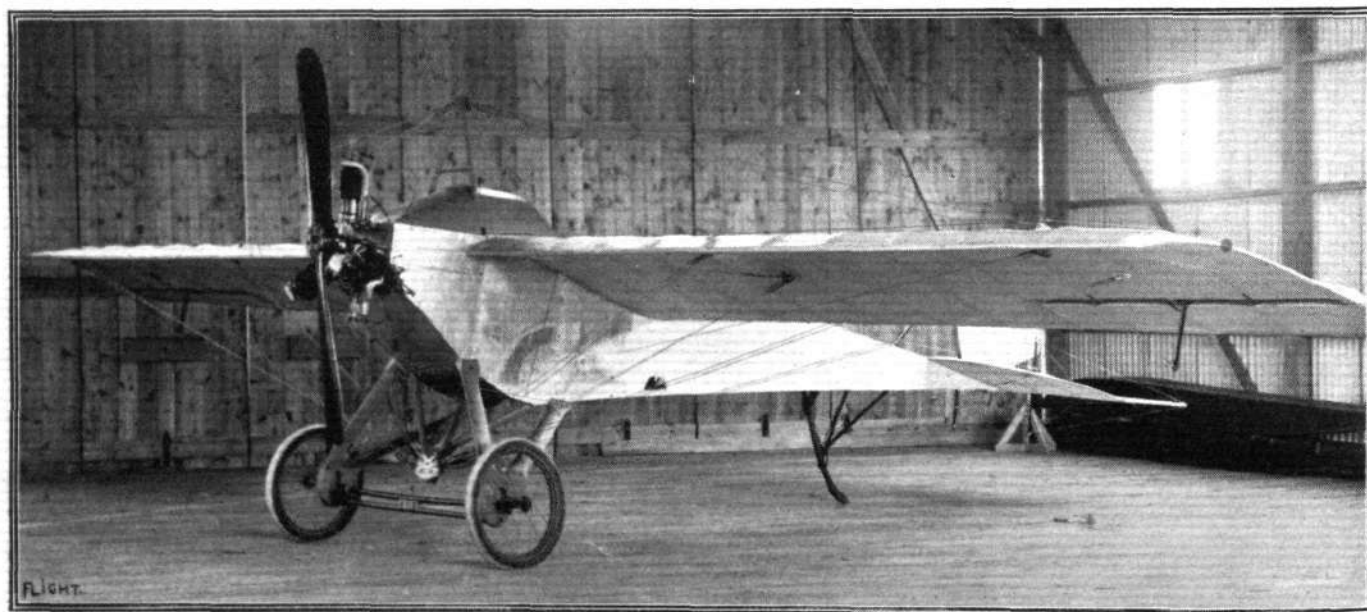
THE E.A.C. MONOPLANE.—Front view.

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an able pilot, so that, although the machine is an experimental one, it should be fairly certain to give a good account of itself.

Looking over the machine, one of the features which first attracts attention, is the presence of *aileron*s for the maintenance of lateral stability, instead of the method of wing warping usually adopted for that purpose.

ash, are placed very close together, so that the rear spar is placed about half-way along the chord. This method of construction imparts a certain amount of flexibility to the trailing edge and has, furthermore, the advantage that it allows a compression strut—in this case a very strong steel tube—to be interposed between the upper *longerons* of the fuselage in front of the pilot's seat for the purpose



A three-quarter view of the E.A.C. monoplane from the front.

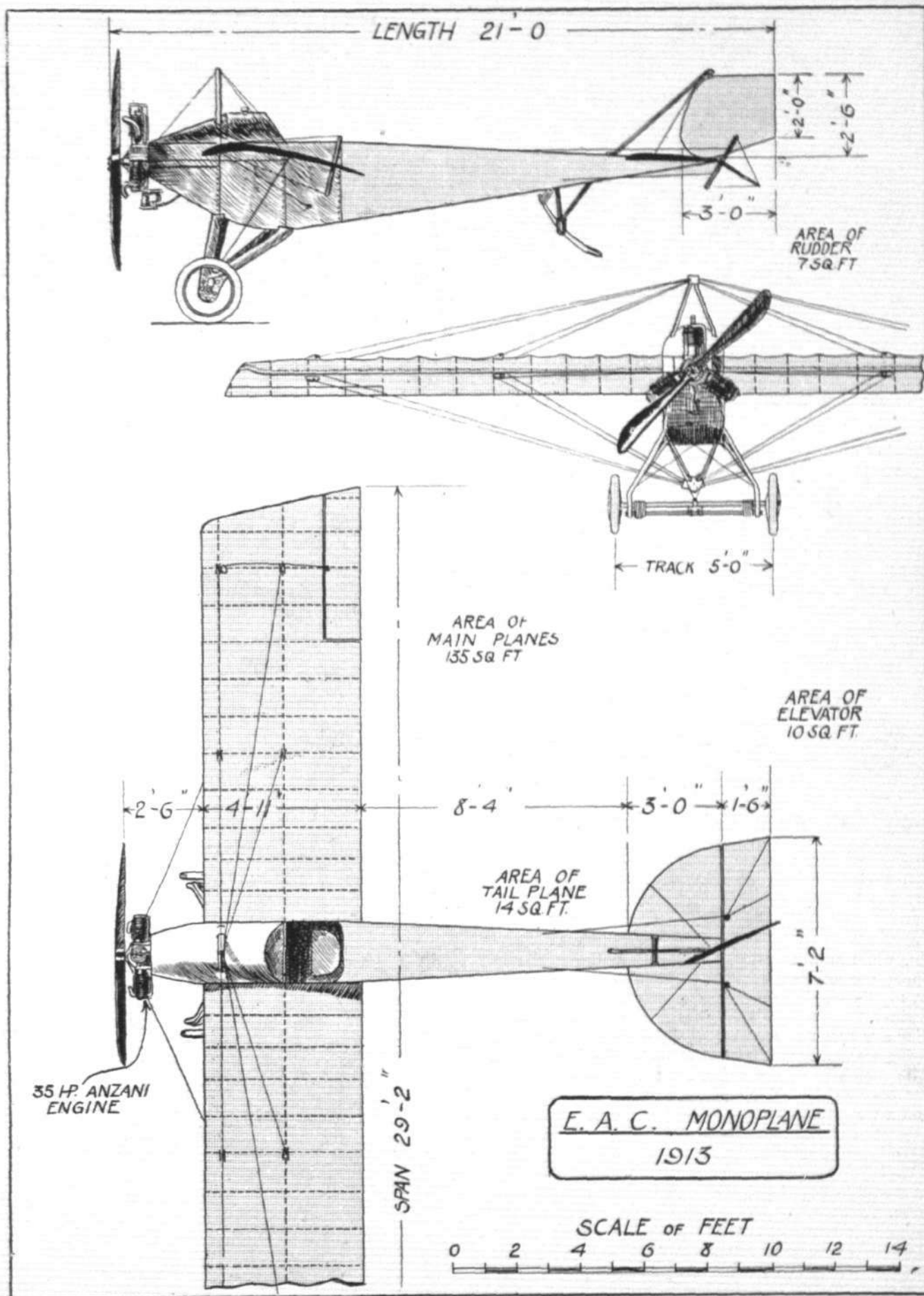
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Although this is a departure from what has now come to be almost standard practice as regards monoplane construction, it is a system which works quite well in machines of the biplane type, and there is no apparent reason why it should not be equally successful when applied to monoplanes, especially when, as in this case, the *aileron*s are interconnected, so that when one is depressed the other is elevated a corresponding amount.

of resisting any tendency of the wings to bend the *longerons* of the body inwards.

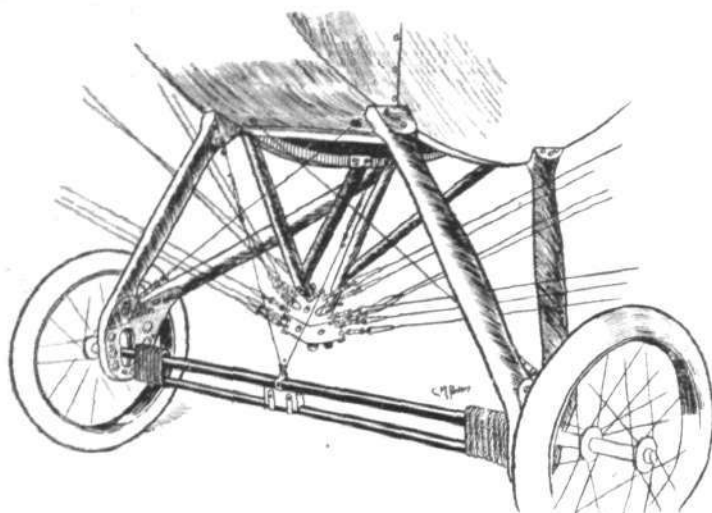
Evenly spaced along the spars—except for the three ribs nearest the root, which are placed closer together than the rest—are the ribs, which have webs of three-ply wood, with top and bottom flanges of spruce and ash, respectively.

Very stout stranded cables, anchored to steel plates,



THE E.A.C. MONOPLANE.—Plan, side and front elevation to scale.

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Sketch showing landing chassis and lower pylon with its fittings.

which in turn are secured to the apex of the lower pylon by three bolts, take the weight of the machine when in

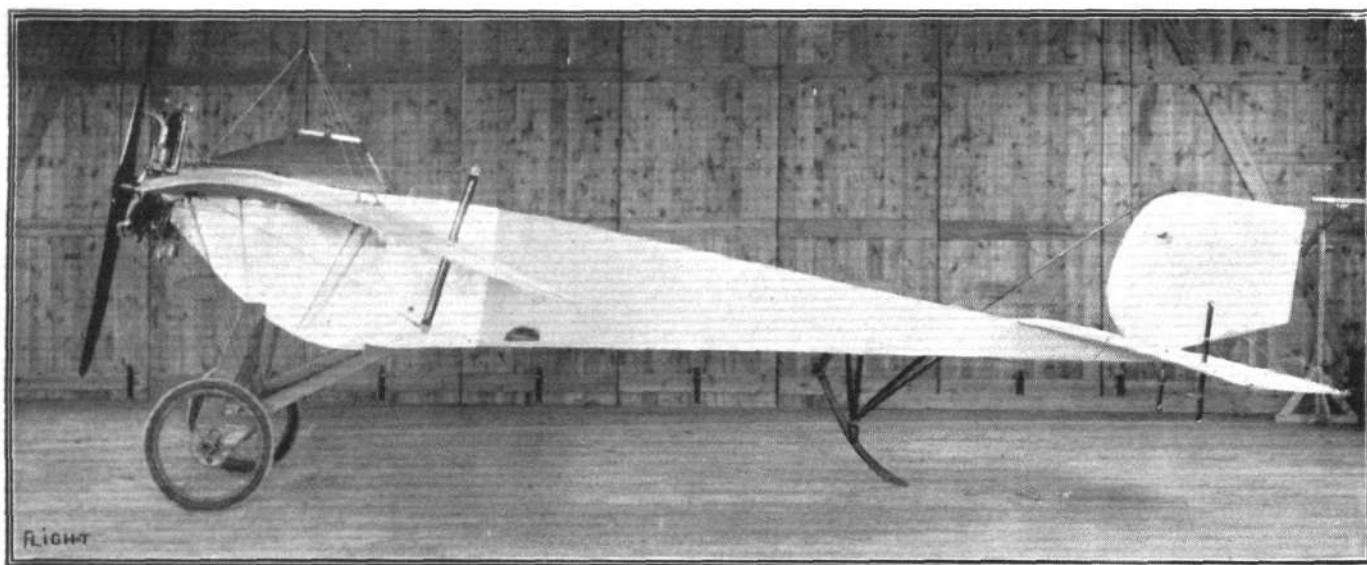
Stranded cables running from the lower *aileron* levers around pulleys on the outer steel clips of the front spar to the control lever operate the *ailerons*, which are interconnected by another cable running along the top of the front spar.

The body, which is of rectangular section, is very deep in the region around the pilot's seat and tapers to a horizontal knife edge at the back. The *longerons* are of ash and the struts and cross members are of spruce in the rear portion of the body while in the front part ash is employed.

Between the two main spars and on top of the body is situated the tank, which is divided longitudinally by a partition. The left-hand division contains $1\frac{1}{2}$ gallons of oil, whilst in the right-hand one are carried 6 gallons of petrol.

An aluminium casing, running from the nose of the machine up to the front of the tank, serves to deflect the air, and the rear end of the tank is made sloping, so as to serve as a dashboard.

Well down in the deepest part of the body is the seat for the pilot, who controls the machine by means of a centrally pivoted lever, mounted on a rocking shaft. A sideways movement of the lever operates the *ailerons*,



Side view of the E.A.C. monoplane.

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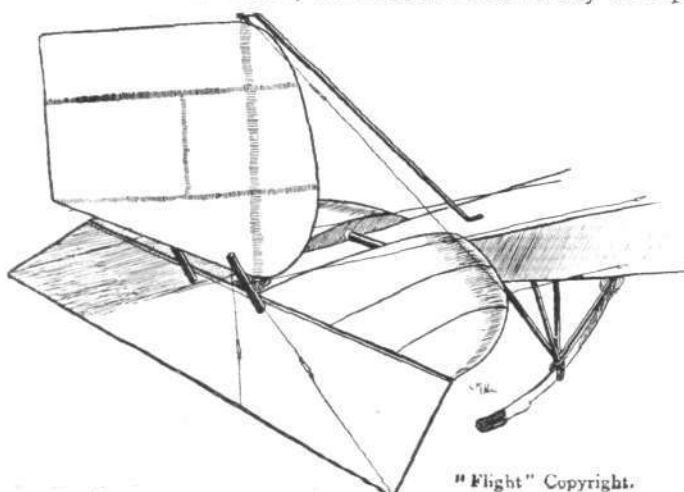
flight, while another cable, running from the steel clip forming the anchorage for the inner lift wire on the rear spar, to the crank case of the engine, takes the drift of the wings.

The advantage of securing all the lift wires to a pylon, forming a separate unit instead of anchoring them to one of the members of the chassis, is that even should the latter become damaged through a rough landing, there is still a very good chance of the pylon remaining intact, so that the chassis may be repaired without in any way disturbing the stay wires.

Top bracing is effected by cables secured to the apex of a single A-shaped pylon of steel tubing of stream-line section. All the lift wires are duplicated, and it is worth noticing that each wire is anchored to a separate bolt.

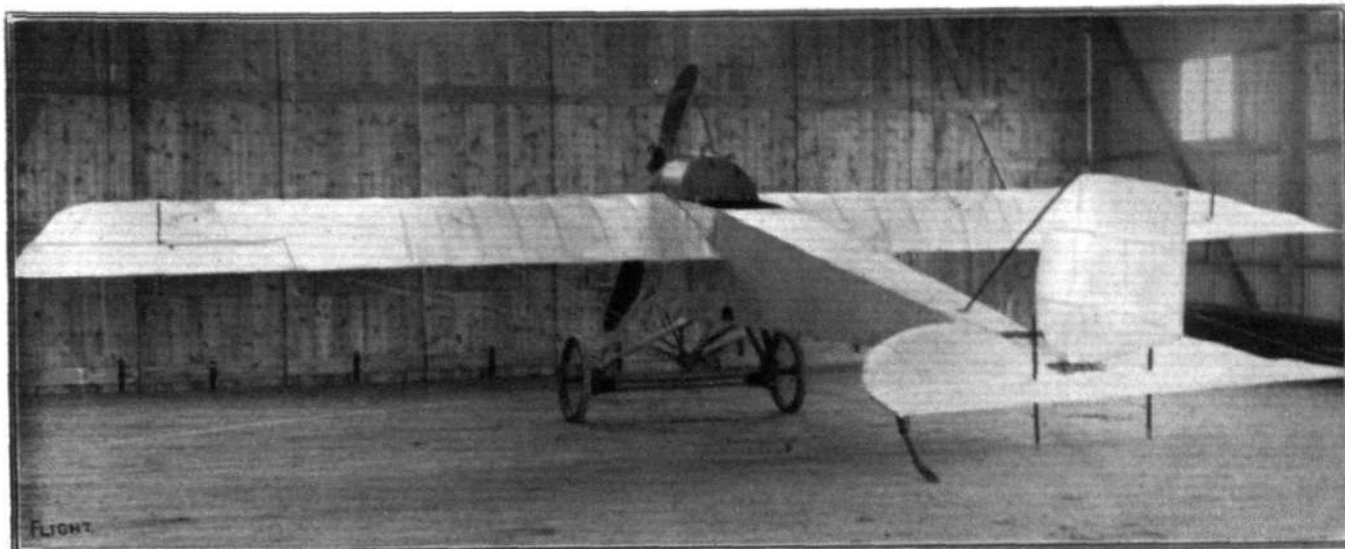
As the rear spar is situated a considerable distance from the trailing edge, it has not been possible to hinge the *ailerons* to the rear spar, as is usually done, but a steel tube, situated roughly half-way between the trailing edge and the spar, serves as a pivot for the *ailerons*.

while a to-and-fro motion works the elevator. A foot bar actuates the rudder, which is situated wholly on top



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Empennage and tail skid of the E.A.C. mono.



The E.A.C. monoplane, as seen from behind.

"Flight" Copyright.

of the tail planes. The rudder crank levers are mounted on the lower end of the tube, around which the rudder is pivoted, so that the rudder wires are carried inside the body throughout their entire length.

The tail plane, which is semicircular in plan view, is flat on the underside, while the top surface is cambered. Hinged to its rear edge is an undivided elevator plane of ample proportions.

The *empennage* is protected from contact with the ground by a tail skid.

A landing chassis of very neat design supports the machine when on the ground. As will be seen from the accompanying sketch it consists of two pairs of ash V struts, separated at their lower extremities by a steel tube. The tubular axle passes through two slots immediately above this tube, from which it is sprung by means of rubber shock absorbers.



Chairmanship of the Royal Aero Club.

At the meeting of the Committee of the Royal Aero Club on Tuesday last, the Marquis of Tullibardine, M.V.O., D.S.O., M.P., was elected Chairman of the Club in succession to the late Sir C. D. Rose, and Colonel H. C. L. Holden, C.B., was elected Vice-Chairman.

National Aeronautics in the City.

At a meeting convened by the Imperial Maritime League, and held on Tuesday, in the Merchant's Hall of the Baltic Exchange, and presided over by Mr. Howard Houlder, the following resolution was unanimously passed:—

"This meeting of citizens desires to call attention to statements of the First Lord of the Admiralty in the House of Commons, showing that on April 1st, 1914, we shall have, in home waters, an inferior number of Dreadnoughts ready for immediate use as compared with one other Power; and also to the statements of the Secretary for War in the House of Commons, showing the relative inferiority of British airships as compared with other Powers. We call upon His Majesty's Government to take the necessary steps to meet the existing situation, and beg to assure them that in any measures they may take for that purpose they will have the whole-hearted support of all patriotic citizens."

The Waterplane Mother Ship.

THE light cruiser "Hermes," which is being commissioned on Wednesday next as the *depôt* of the Naval Wing of the Royal Flying Corps, is to be also a mother ship for naval aeroplanes, and to that end she is being fitted with platforms for launching naval aircraft. As notified elsewhere, her commander is Capt. G. W. Vivian, who has recently qualified as a pilot on a Short machine, while the second in command is Commander F. R. Scarlett.

On to a steel capping plate, forming the nose of the machine, is bolted the 35-h.p. V type Anzani engine, which at present furnishes the power. It drives directly a Rapid propeller of 7 ft. dia.



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Wing section, to scale, of the E.A.C. monoplane.

As has been said before, the machine is an experimental one and no attempt has been made to provide a "Show" finish, but the term *finish* used in this connection must not be confused with *workmanship*, which latter is of a very high class.

The Fatal Accident to Lieut. Rogers-Harrison.

By the fatal accident to Lieut. L. C. Rogers-Harrison, which occurred at Farnborough on Monday morning, the British Army has lost a pilot who had learnt to handle the Cody biplane, which won the British Military Aeroplane Competition, with almost the same skill as its designer. At the inquest, which was held on the following day, little technical evidence was given, but it would seem from the evidence of Mr. Cody, who from his house saw the machine flying just before the accident that it was probably caused through the pilot trying to flatten out too quickly after a very steep dive with the engine running. It was a windy morning when the accident occurred, but Mr. Cody said he would not have hesitated about going up. The matter, however, is being fully investigated by the Accidents Investigation Committee of the Royal Aero Club, who will issue their report in due course. The jury returned a verdict of "Accidental Death."

Death of Mrs. Mortimer Singer.

THE full sympathy of all interested in aviation will be extended to Mr. Mortimer Singer, in the heavy bereavement which has fallen upon him by the death of his wife. By his practical work as a pilot in the early days, and on the Committee of the Royal Aero Club, and by the prizes which he has so liberally provided, Mr. Mortimer Singer has done much to forward the cause of aviation in this country.

The Imperial Air Fleet Fund.

WE learn that the Imperial Air Fleet Fund, of which Mr. William Coward is chairman, and which, in conjunction with the *Standard*, arranged Hamel's flight to Cologne, are to hold a banquet on Thursday next, at which it is hoped Earl Roberts, Lord Desborough and Major Baden Powell will be present.

FLYING AT HENDON.

FOR once in a way, man met with a glorious defeat at the hands of the wind last week-end at Hendon. Nevertheless, though beaten, it cannot be denied that he retired with the honours of the fight. As usual, the wind was blowing a gale by the time Saturday came round, which was the more annoying considering the perfect state of affairs the days previous. By the afternoon it was calculated to be blowing fully 60 m.p.h., in unpleasant gusts and swirls. There was shaking of heads when, shortly after 4 o'clock, Gustav Hamel, accompanied by Miss Trehawke Davies, "sprang" off the earth on the 70-h.p. Gnome-Blériot monoplane belonging to plucky Miss Davies. Appalling is the only word that expresses the way in which the wind played with the monoplane, yet Hamel kept it well in hand. At last, as the machine was passing over the sheds, about 100 ft. up, an extra strong gust struck them, throwing the monoplane over on to its side in an alarming manner. With remarkable skill and judgment, Hamel prevented a fatal side-slip by diving to earth, and, almost miraculously escaping some trees, landed in the field just outside the aerodrome, parallel to Collindale Avenue. Both pilot and passenger were unhurt, and it was

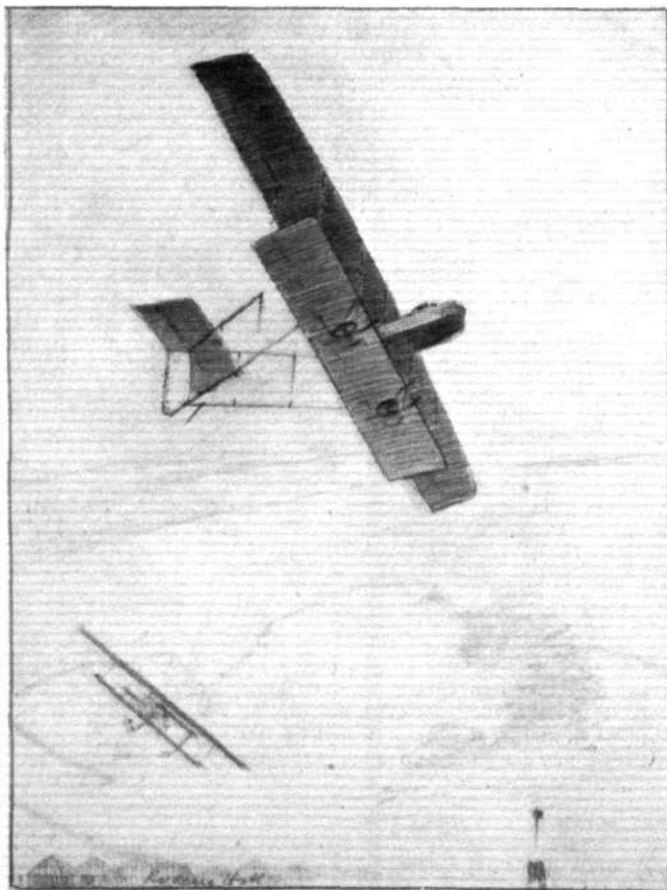


LORD MAYOR'S DAY AT HENDON AERODROME.
—An impression of Hamel by Roderick Hill.

with some relief that they were seen returning to the aerodrome.

A little later on Hamel made another determined attempt to get the best of the wind, this time with the help of his 50-h.p. single-seater Blériot. The machine, however, did not leave the ground quite in the manner intended, for in spite of the fact that several mechanics were holding it down, it was lifted off the ground several times and dashed down again with some violence—once almost on the top of Miss Davies. It was finally decided, therefore, to give up any further attempt at a flight.

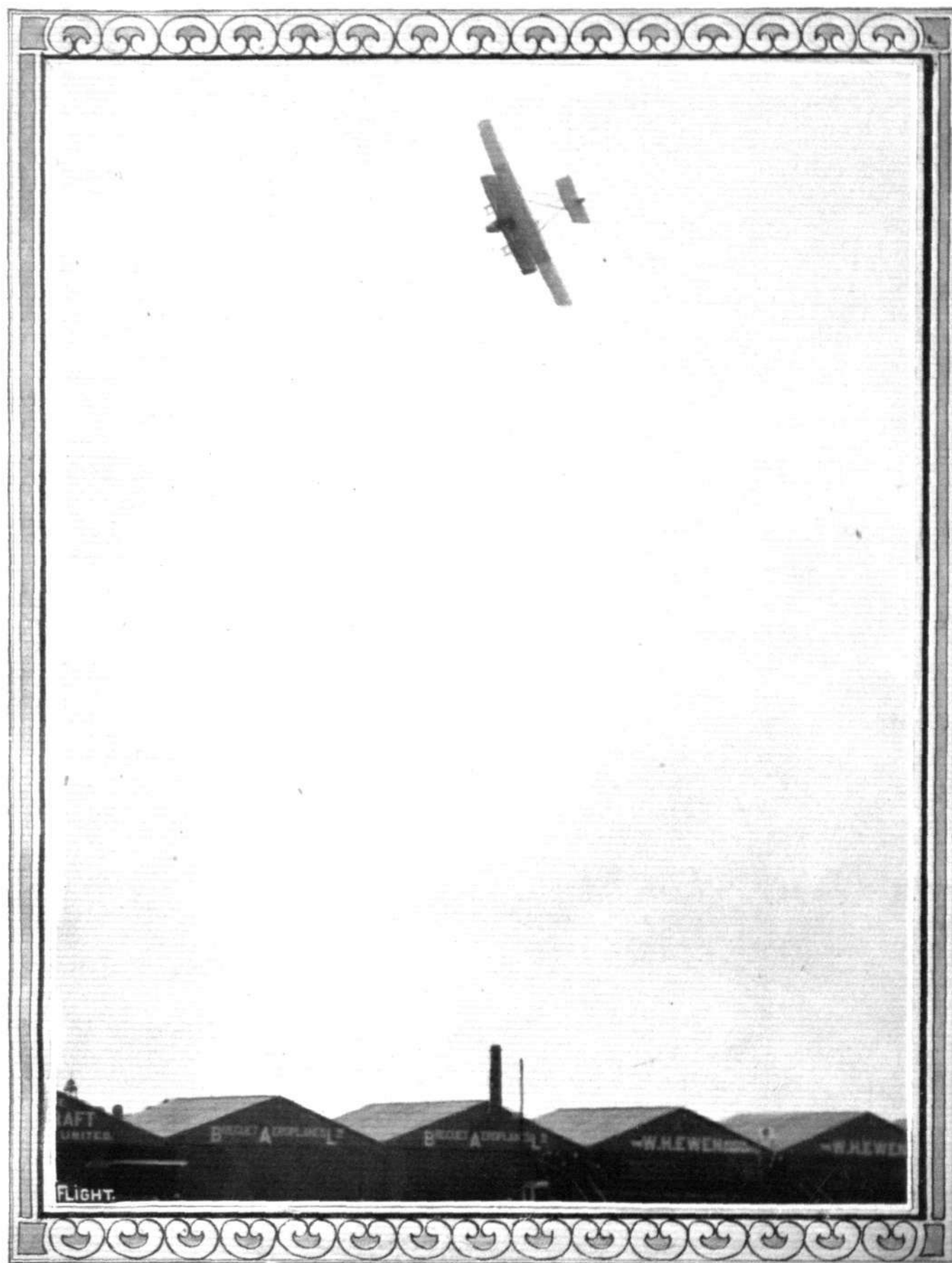
There was little improvement on Sunday; in fact, occasional rain made things rather more unpleasant. Shortly before 4 o'clock, the battle was resumed by a brief skirmish on the part of the reinforcements—in the form of Louis Noel on the 50-h.p. Grahame-White school 'bus! He retired after a few straights, and a little later on, during a momentary relaxation of vigilance on the part of the enemy, Hamel brought out the 50-h.p. single-seater Blériot monoplane. He was no sooner in the air, however, when he was attacked "on all sides," and was finally beaten down close to the scene of the previous day's defeat, and again pilot and machine escaped unharmed.



LORD MAYOR'S DAY AT HENDON AERODROME.
—A race impression of Chevillard and Verrier by Roderick Hill.



LORD MAYOR'S DAY AT HENDON AERODROME.
—Up aloft. Another impression of Hamel by Roderick Hill.



The week before last we gave a photograph showing the remarkable banking of Chevillard on the Farman machine, as seen when approaching the spectator. Above, another bank is seen during one of his dives, and in this the view shows the tops of the planes and the inside of the nacelle, with pilot and passenger.

REFLECTIONS ON THE MONACO MEETING.

(Concluded from last week.)

Borel.

M. Borel was unfortunate in trying to accomplish too much, but his attempt to improve his 80-h.p. hydro-monoplane by the substitution of a 100-h.p. engine and a new pair of wings, was perhaps all the more interesting, inasmuch as it proved to be a failure. It was, however, to be regretted that this result prevented a demonstration with the new 9-cyl. 100-h.p. Gnome rotary engine. There were three of these new Gnome engines at Monaco, but none of them happened to be on aeroplanes that were regularly flying.

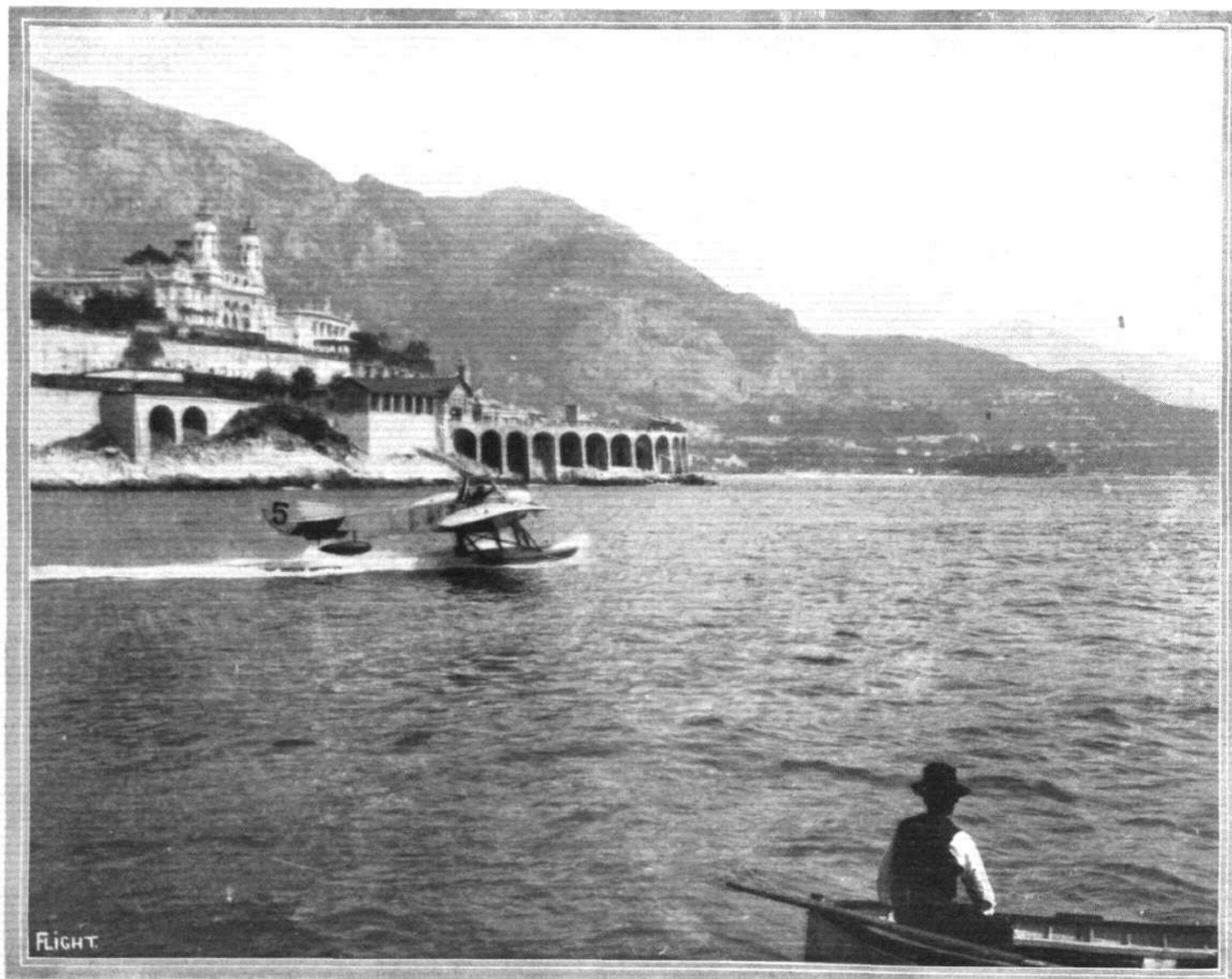
The Borel hydro-monoplane is a double float machine, and has its floats rigidly attached to the body by a simple system of steel tubes, which are of flattened cross-section in order to reduce windage. It is difficult to combine streamline section with forms that afford a maximum resistance to bending moment, in the case of float struts, and it was not surprising that, on the occasion of the mishap to the Borel monoplane in Monaco Harbour, several of these struts were bent. It is to the credit of the constructors, however, that there was no sign of

fracture, and also to the credit of the workmen, who stayed up all night, that they had replaced all the damaged tubes in readiness for flight the next morning.

In addition to the standard type of monoplane, there was also present under M. Borel's name an entirely different type of craft designed by Denhaut. This particular machine had a dolphin-like body forming a boat in the bows, but with its stern upraised to carry the tail. Whether to call the machine a monoplane or a biplane is a matter for question inasmuch as the lower planes have more the appearance of fins jutting from the side of the boat than they have of aeroplane surfaces. A 100-h.p. Gnome engine is carried on struts at the level of the upper plane, and drives a two-bladed propeller.

Artois.

The Artois aeroplane, which was so ill-fated as to cause the death of Gaudart, also possessed one of these dolphin-like boat bodies. According to eye-witnesses who observed the accident, it demonstrated unmistakable signs of longitudinal instability after rising with considerable facility from the surface of the water. Being



The Nieuport hydro-monoplane showing its paces at Monaco during the recent meeting.

an experiment, the accident may in some measure be classed with that resulting in the death of Fenwick on the Mersey monoplane during the military trials on Salisbury Plain last year. And it is because of these things that designers are, as we have mentioned elsewhere, very diffident about departing from methods of construction in which they feel the confidence of long experience. In the Artois biplane, an 80-h.p. Gnome engine drove a four-bladed propeller by means of a chain. The wings were built upon single spars, separated, of course, by a single row of struts in the gap.

Morane-Saulnier.

The Morane-Saulnier biplane is essentially of the Farman type. The machine at Monaco had an 80-h.p. Rhone rotary engine, which differs from the Gnome in having mechanically-operated inlet-valves served by external radial induction-pipes.

Rigid floats are employed, and the two floats are tied together by a cross bracing of wire lying in a horizontal plane on the same level as the deck of the float. When navigating, this wire bracing seems liable to be immersed.

Many excellent flights were made by Garros on the Morane-Saulnier monoplane, which, however, was not entered for the Grand Prix.

De Marçay.

It is a pity that the De Marçay monoplane did not demonstrate its flying abilities in a more pronounced manner during the Monaco Meeting, for there is no doubt that those interested in its method of wing bracing would have felt greater confidence in the design by becoming more accustomed to the view from beneath. The wings of this machine are arranged to fold back against the body in order that it may ride more securely at anchor. A useful purpose is potentially served by this provision, and the method of achieving the desired end thus becomes of moment. On the De Marçay, the wing structure appears to be more or less in accord with common practice, but the attachment of the wings to the body is altogether unusual. Each wing is carried by a tubular steel mast that slopes obliquely backwards and outwards from the bottom to the top. The mast passes through the trailing corner of the wing shoulder, and to the top and bottom of the mast all the bracing wires are carried. Owing to the slope of the mast, the backward rake of the lower wires is less than is the case with the upper wires, but the disposition in both instances is sufficiently unusual to arrest the attention. The drag on the wing is resisted by the steel cable controlling the position of the wing, and this same control serves the purpose of swinging the wing to and fro slightly in flight, as a means of lateral balance in lieu of warping.

Nieuport.

It is extremely difficult to formulate an opinion on the relative advantage of the Nieuport triple step keel float, when such a pilot as Weymann is at the wheel. Nevertheless, these machines unquestionably possess a special interest on account of this feature, and it seemed to us that the Nieuport did actually show to advantage when it came to a question of really skimming the water.



Meeting in Mid-Channel.

THERE was an element of novelty about the commencement of the fine flight which was made by Mr. Gustav Hamel with Miss Trehawke Davies as passenger on the 23rd ult., from Dover to Hendon. After starting from Dover the 70-h.p. Blériot was headed out to sea to meet the incoming steamer from Calais on which a friend was travelling. On reaching the steamer, Mr.

The subject of float construction and the use of steps is one that involves much study, and in our opinion hydro-aeroplane constructors will be wise if they call upon the experience of the boat builders who have been specially engaged upon hydroplane work. There are several enthusiasts in motor boating circles who could probably give waterplane constructors many a useful hint. The problem is evidently one of no mean difficulty, and if, as is likely, the waterplane built upon a boat-like foundation becomes a prominent experimental type, then there is no question as to the importance of regarding the subject from the boat builder's point of view.

The hydroplane, which is distinguished from the ordinary flat-bottomed racing boat by the presence of one or more steps in the boat bottom, was invented as long ago as 1782 by a clergyman named Ramus. Having been regarded at the Admiralty from the standpoint of large ships, it was deemed impracticable as a method of construction, owing to the speed that would have been required to have ensured the hydroplaning principle coming into action. It was only when high-speed motor boat racing had shown the possibility of unheard of speeds with short boats, that a serious effort was made still further to improve upon the high velocity qualities of racing craft. Curious little box-like hydroplanes were built by Lelas in France, and used to bounce over the water in a most exhilarating way, but it was Sir John Thornycroft who most seriously tackled the problem of building a hydroplane boat of reasonable weatherliness and more than nominal passenger accommodation.

Anyone who has been at speed in a hydroplane will have acquired an immense respect for the hardness of the water and the force of the blow that it can deal against the bottom of a high-speed boat. Indeed, it is amazing that any structure withstands the apparent strain. To lift the hydroplane out of the water on wings would be a highly desirable mode of continuing the journey, and the experiments of Curtiss and others suggest that this type of craft may play a prominent part in future development. On such machines there is small doubt that the stepped bottom will be a feature of design, but the question of using steps on comparatively small floats is less readily answered in the absence of experiment, and that is why the Nieuport monoplane at Monaco had an especial interest to us, for it was the only machine there with stepped floats.

Astra.

The Cie. Générale Transaérienne are responsible for the construction of the Astra hydro-biplanes, which are of the tractor type. Those entered for the Monaco competition had Canton-Unné engines, but other machines of this make were also present with 12-cyl. Renault engines. It appears that the design of these machines has recently been modified and a new wing section introduced. The earlier successful types had a wing section corresponding to that of the Wright biplane. The present machines have flat bottomed floats rigidly attached to the lower planes by tubular steel struts of circular section.



Hamel brought the machine down by a spiral *vol plané*, and, after circling round the vessel, flew off in the direction of Folkestone, and so by way of Maidstone to the Metropolis.

The British Parseval on Trial.

ON Saturday, at Bitterfeld, a successful trial of 45 minutes' duration was made with a new Parseval dirigible, which it is understood is the one built for the British Government.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Committee Meeting.

A MEETING of the Committee was held on Tuesday, April 29th, 1913, when there were present: Prof. A. K. Huntington, in the Chair, Mr. Griffith Brewer, Mr. Ernest C. Bucknall, Mr. G. B. Cockburn, Major J. D. B. Fulton, R.F.A., Mr. F. K. McClean, Mr. Alec Ogilvie, Mr. Mervyn O'Gorman, Mr. C. F. Pollock, Com. C. R. Samson, R.N., Mr. R. W. Wallace, K.C., and the Secretary.

Election of Chairman.—On the motion of Mr. R. W. Wallace, K.C., seconded by Mr. M. O'Gorman, the **Marquess of Tullibardine, M.V.O., D.S.O., M.P.**, was unanimously elected **Chairman of the Club**.

Election of Vice-Chairman.—On the motion of Mr. R. W. Wallace, K.C., seconded by Prof. A. K. Huntington, **Col. H. C. L. Holden, C.B., F.R.S.**, was unanimously elected **Vice-Chairman of the Club**.

New Members.—The following new members were elected:—2nd Lieut. R. A. Archer, R.F.A., Ernest Charles Bass, 2nd Lieut. Frank Beevor (18th Hussars), Lieut. F. G. Brodribb, R.N., J. H. Cock, Lieut. F. Cogan, R.F.A., Lieut. W. F. Robertson Dobie (Gordon Highlanders), Lieut. G. D. G. Elton (Royal Irish Fusiliers), Lieut. E. G. Harvey (The Wiltshire Regiment), Lieut.-Col. G. Hearn, J. E. Huson, Lieut. Charles H. Neill James, R.N., J. C. Joubert de la Ferté, L. E. J. Lonnén, Donald W. Monteith, F. C. Nestler, A. H. Parker, J. E. Pearse, C. G. Simcox, L. H. Strain, G. W. Strode and 2nd Lieut. C. W. Wilson, R.F.C.

Aviators' Certificates.—The following Aviators' Certificates were granted:—

No.	Date.	
463	April 12, 1913	2nd Lieut. W. R. Read, K.D.G. (Bristol Biplane, Bristol School, Salisbury Plain).
464	April 22, 1913	Sergt. H. V. Robbins (Maurice Farman Biplane, Central Flying School, Upavon).
465	April 23, 1913	Shipwright D. Shaw, R.N. (Short Biplane, Royal Naval Aviation School, Eastchurch).
466	April 23, 1913	H. C. Tower (Bristol Biplane, Bristol School, Salisbury Plain).
467	April 23, 1913	Sergt. W. R. Bruce (Maurice Farman Biplane, Royal Flying Corps, Salisbury Plain).
468	April 24, 1913	Com. F. R. Scarlett, R.N. (Maurice Farman Biplane, Central Flying School, Upavon).

It was decided that in future Aviators' Certificates should bear the date of the passing of the tests.

Sub-Committees.—The following Sub-Committees were appointed for the year, subject to Rule 22:—

COMPETITIONS COMMITTEE.—F. P. Armstrong, Ernest C. Bucknall, G. B. Cockburn, Capt. A. E. Davidson, R.E., Col. H. C. L. Holden, C.B., F.R.S., Prof. A. K. Huntington, Major F. Lindsay Lloyd, J. T. C. Moore-Brabazon, N. C. Neill, Alec Ogilvie, Mervyn O'Gorman, E. V. Sassoon, A. Mortimer Singer.

TECHNICAL COMMITTEE.—Prof. J. H. Biles, Col. J. E. Capper, C.B., R.E., G. B. Cockburn, Capt. F. Creagh-Osborne, R.N., Alexander Duckham, Major J. D. B. Fulton, R.F.A., Col. H. C. L. Holden, C.B., F.R.S., Prof. A. K. Huntington, Major F. Lindsay Lloyd, Alec Ogilvie, Mervyn O'Gorman, Com. C. R. Samson, R.N.

FOREIGN RELATIONS COMMITTEE.—Griffith Brewer, Capt. Bertram Dickson, Sir Henry Norman, M.P., Mervyn O'Gorman, Roger W. Wallace, K.C.

HOUSE COMMITTEE.—Ernest C. Bucknall, C. G. Grunhold, N. C. Neill, C. F. Pollock, E. V. Sassoon.

GROUNDS INSPECTION COMMITTEE.—S. a'Court, Ernest C. Bucknall, G. B. Cockburn, F. K. McClean, J. T. C. Moore-Brabazon, N. C. Neill, Alec Ogilvie, T. O. M. Sopwith.

LEGISLATION COMMITTEE.—Ernest C. Bucknall, Alan H. Burgoyne, M.P., A. du Cros, M.P., J. Norton Griffiths, M.P., W. Joynson-Hicks, M.P., Arthur Lee, M.P., G. A. Lloyd, M.P., Sir A. Mond, M.P., Sir Henry Norman, M.P., C. F. Pollock, Lionel N. Rothschild, M.P., G. J. Sandys, M.P., Hon. Arthur Stanley, M.V.O., M.P., Roger W. Wallace, K.C.

CLUB GROUND COMMITTEE.—Ernest C. Bucknall, J. W. Dunne, Hon. Maurice Egerton, Prof. A. K. Huntington, F. K. McClean, Alec Ogilvie, Commander C. R. Samson, R.N., Staff-Surgeon Hardy Vesey Wells, R.N.

BALLOON COMMITTEE.—Griffith Brewer, John D. Dunville, Philip Gardner, Dr. W. J. S. Lockyer, J. T. C. Moore-Brabazon, C. F. Pollock, A. Mortimer Singer, Roger W. Wallace, K.C.

PUBLICITY COMMITTEE.—R. Wherry Anderson, Prof. A. K. Huntington, Stanley Spooner.

LIBRARY COMMITTEE.—C. G. Grey, T. O'B. Hubbard, Prof. A. K. Huntington, Stanley Spooner.

PUBLIC SAFETY AND ACCIDENTS INVESTIGATION COMMITTEE.—A. E. Berriman, Engineer-Lieut. E. F. Briggs, R.N., G. B. Cockburn, Major J. D. B. Fulton, R.F.A., Col. H. C. L. Holden, C.B., F.R.S., J. H. Ledebor, F. K. McClean, W. O. Manning, Alec Ogilvie, Mervyn O'Gorman, Maj.-Gen. R. M. Ruck, C.B., R.E., Com. C. R. Samson, R.N., Staff-Surgeon Hardy Vesey Wells, R.N.

The Chairman of the Club, The Marquess of Tullibardine, M.V.O., D.S.O., M.P., and the Vice-Chairman, Col. H. C. L. Holden, C.B., F.R.S., are *ex-officio* members of all Committees.

Mansion House Meeting.—Communications received from the Aerial Defence Committee of the Navy League in connection with the Public Meeting to be held at the Mansion House on May 5th, 1913, were considered, and it was decided to co-operate with the Navy League and the Aeronautical Society in making the meeting a success. The following were appointed to represent the club: the Marquess of Tullibardine, M.V.O., D.S.O., M.P., (Chairman of the Club), Col. H. C. L. Holden, C.B., F.R.S. (Vice-Chairman), Prof. A. K. Huntington, and Mr. R. W. Wallace, K.C.

Appointment of Timekeepers.—The following Timekeepers were appointed for the coming year:—F. T. Bidlake, J. H. Burley, A. Deacon, T. D. Dutton, A. V. Ebbelwhite, A. Fattorini, C. P. Glazebrook, H. Hewitt Griffin, J. B. Hyland, James M. Inglis, A. G. Reynolds, J. E. Rhodes, Z. Wheatley.

Public Safety and Accidents Investigation Committee.

A meeting of the Public Safety and Accidents Investigation Committee was held on Monday, April 28th, 1913, at 8.30 p.m., at the Royal Automobile Club (by kind permission), when there were present:—Col. H. C. L. Holden, C.B., F.R.S., in the Chair, Mr. A. E. Berriman, Mr. G. B. Cockburn, Mr. F. K. McClean, Mr. Alec Ogilvie, Mr. Mervyn O'Gorman, Major-Gen. R. M. Ruck, C.B., R.E., Com. C. R. Samson, R.N., and the Secretary.

Salisbury Plain Accident.—This matter was again under consideration and deferred.

Accident at Farnborough.—Mr. G. B. Cockburn, Mr. M. O'Gorman, and Mr. H. E. Perrin (Secretary) reported that they had visited Farnborough in connection with the fatal accident to Lieut. L. C. Rogers-Harrison, which had occurred that morning, and had inspected the wrecked aircraft and held an inquiry on the spot. It was decided to hold a further meeting on May 5th, 1913, and to invite Mr. S. F. Cody to attend.

Competitions Committee.

A meeting of the Competitions Committee was held on Tuesday, April 29th, 1913, when there were present:—Major F. Lindsay Lloyd, in the Chair, Mr. F. P. Armstrong, Mr. Ernest C. Bucknall, Mr. G. B. Cockburn, Prof. A. K. Huntington, Mr. F. K. McClean, Mr. Norman Clark Neill, Mr. Alec Ogilvie, Mr. Mervyn O'Gorman, Mr. E. V. Sassoon, and the Secretary.

British Empire Michelin Cup No. 1.—It was decided that all competitors for this competition should make a flight of one hour's duration at the aerodrome from which the start is made, before commencing the cross-country flight. The flight at the aerodrome is to form part of the competition, and the competitor will be signalled at the expiration of the hour to proceed on the cross-country course, as laid down in the conditions.

Daily Mail Prizes.—The Secretary reported his interview with Lord Northcliffe and the Committee proceeded to consider the regulations to govern the prizes offered by the *Daily Mail*, i.e., £10,000 for the Cross-Atlantic flight and £5,000 for the circuit of Great Britain.

Presentation to Mr. G. B. Cockburn.

Prior to the meeting of the Accidents Committee, on Monday last, Colonel Holden, on behalf of members of various committees of the Club, presented Mr. G. B. Cockburn with a stop-watch suitably engraved, as a token of good wishes on the occasion of his recent marriage.

166, Piccadilly.

HAROLD E. PERRIN, Secretary.

FROM THE BRITISH FLYING GROUNDS.

Brooklands Aerodrome.

ON Monday, Tuesday, Wednesday, and Thursday last week school work was in full swing, but no flying was possible for the rest of the week owing to rain and strong winds, consequently the testing of the new machines had perforce to be postponed.

On Tuesday the finest *brevet* tests for many a long day were carried out in a most workmanlike manner by Sub-Lieut. R. E. C. Peirse, R.N.V.R., of the Bristol School, and by Lieut. V. Waterfall, East Yorks Regt., and Mr. R. N. Wight, of the Vickers School, reflecting the greatest credit upon their respective instructors, Messrs. Merriam (Bristol) and Barnwell (Vickers). A misty morning prevented a higher altitude than 200 ft. being reached, but all effected very good *vol plané* landings, Mr. Wight coming down on the mark itself, whilst Mr. Waterfall's banked turns would have compared most favourably with those seen in competitions. Lieut. Waterfall (who is now shaping extremely well on a monoplane) and Sub-Lieut. Peirse should prove distinct acquisitions to the Royal Flying Corps and the Naval Wing respectively.

The large crowd present on Wednesday witnessed a spectacle probably unique in the annals of aviation, for no less than four different types were in the air at the same time—ranging from the stately Army airship (which circled the aerodrome) to a balloon, piloted by Messrs. Radley and Waterlow, from Battersea (the occupants of which landed for tea and then resumed their journey), over both of which manœuvred Mr. Barnwell in the Vickers monoplane, and Mr. Merriam in the Bristol biplane. Mr. Marcus was out rolling on Mr. Spencer's biplane.

Bristol School.—At 5.10 a.m. on Sunday, last week, Bendall and Merriam testing machines early before pupils arrived, afterwards Bendall giving tuition to Mr. Strain, who was in the passenger's seat, on straights. Merriam up with Lieut. Hosking and behind Major Merrick on straights. Wind stopped further flying. 3.30 p.m., Merriam giving an exhibition flight, then up with Lieut. Strong (prospective pupil), afterwards up behind Lieut. Broder, and later with Lieuts. Hosking and Cogan, Bendall meanwhile giving an exhibition in flying. Afterwards Lieut. Ed. MacClellan made a couple of good circuits. Merriam finished the morning's work with a solo in a stiff breeze.

At 11 o'clock on Monday wind ceased a little, Merriam with Lieut. Cogan as passenger for three circuits, but wind too bumpy for pupils to go alone. Merriam took Lieuts. Broder and Hosking on several straights, sitting in passenger's seat, and the former for a couple of circuits, which taught him a lot in a wind. Merriam up for test, taking Mr. Strain out, found wind bumpy. Later, tried again with Major Merrick as passenger, and Bendall taking Lieut. Hosking on another machine. Lieut. Peirse then away for his ticket, after one circuit. Rain drove all into the hangars. The machines were brought out again three times, but rain came on each time.

Merriam out for an early test on Tuesday, but found it too foggy to be safe. Later cleared a little and tried again; much better. Then sent Lieut. Peirse for his ticket, which he obtained excellently, flying at an average height of 110 ft., landing *en vol plané* with engine cut off. Bendall for test on another machine, then behind Mr. Strain on several straights. Merriam behind Major Merrick, Lieut. Hosking and Mr. Grey on several straights, the latter then alone for first time, making two fairly good straights. Merriam took up Lieut. Cogan, giving him banking practice, afterwards this pupil made good straights, and several half turns. After breakfast, Bendall and Merriam made a solo each to try conditions, but found not good enough. Merriam finished by giving Mr. Grey practice in landings. 4.30 p.m., Bendall and Merriam for test on machines, the latter then going up behind Mr. Strain, Lieut. Hosking, Major Merrick, and Mr. Grey in turns. Merriam behind all these pupils for several straights, &c., then sent Mr. Strain alone, this pupil flying quite well. Lieut. Cogan made his first circuits in fine style, having two turns. Merriam finished with a solo to the sheds, darkness preventing further work.

Fog cleared about 6.30 on Wednesday. Merriam went for test with Major Merrick as passenger, then giving this pupil landing practice on a number of straights, afterwards up behind Lieut. Hosking on straights, this latter pupil then up alone for first time, flying quite well with good landings. Bendall away on another machine for test, afterwards up behind Major Merrick on several straights. Mr. Strain doing straights in fine style. Lieut. Cogan figures of eight, circuits, &c., splendidly, and Mr. Grey doing straights, all pupils having two or three turns each, Merriam finished the morning's work by taking Mr. Strain to a good height over Byfleet, making a spiral descent to the aerodrome. Later in the afternoon the wind dropped a little, and Merriam tried conditions, and, whilst up, seeing the Army airship coming, circled several times over it. Later Bendall up with Lieut. Hosking as

passenger, and found very bumpy. Merriam tried again later and decided to close for the evening as it was still bad.

On Thursday, at 5 o'clock, Bendall went for a trial on one machine and Merriam on another. Afterwards Lieuts. Cogan and Ed. MacClellan carried out several good figures of eight, both landing very well. Messrs. Strain and Grey and Lieut. Hosking all out for good straights. Merriam up as passenger to Major Merrick on a good number of straights for landing practice. Bendall up behind Lieut. Broder, giving quite a lot of practice in landings to him. Mr. Strain then made his first circuits splendidly. Mr. Grey and Lieut. Hosking for more straights. Lieuts. Ed. MacClellan and Cogan, figures of eight, and practicing landing. Merriam up again behind Major Merrick, and afterwards behind Lieut. Broder on several straights after all pupils had another turn each, and flying was abandoned until after breakfast. Merriam later went up for a high flight, but found conditions unfavourable, and work was carried on in the hangars. Towards the latter part of the afternoon the wind dropped, and Merriam set out for test but found too bumpy for pupils. Later up again, taking Lieut. Wall as passenger. Lieut. Cogan figures of eight, Mr. Strain circuits. Lieut. Hosking straights, and first circuit very well, and good landings. Bendall meanwhile testing machine, then went behind Lieut. Wall for a number of straights. All pupils got in two turns each. Merriam flew to sheds when it was nearly dark.

On Friday, at 5 a.m., Merriam for test of two circuits, at about 5.30 taking Major Merrick as passenger, but found much too bumpy for school work. No other machines out. No flying in the afternoon owing to wind and rain.

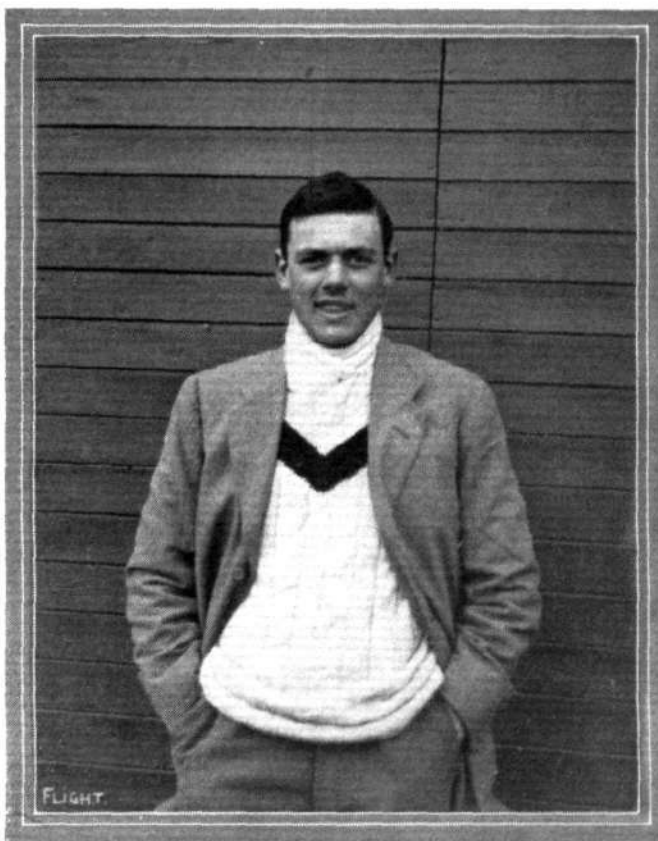
Howard-Flanders School.—Monday, last week, Raynham, on biplane, doing straights solo after breakfast, testing engine.

Tuesday.—In evening Apps rolling for ½-hour, and Dukinfield-Jones rolling two straights.

Thick fog till about 7 a.m. Thursday. From 7 till about 8.30, Apps rolling and Dukinfield-Jones doing straight flights. In the evening both out again for ½-hour.

Vickers School.—Wind and rain Monday, last week, prevented much flying. In the afternoon, Barnwell took Mr. Duncan, of Messrs. Vickers, Ltd., for a few circuits on biplane, finishing in brisk rain shower.

Messrs. Waterfall and Wight both went for their *brevets* Tuesday, on biplane, first thing in the morning, both getting through in



Mr. Vincent Waterfall, who has recently taken his *brevet* at the Vickers Flying School at Brooklands on a Vickers biplane.

exceptionally good style, Mr. Waterfall making some very fine right and left-hand banked turns, but always with machine under full control. Mr. Andreae then doing good straights solo on biplane, and, later, circuits in bumpy breeze with Barnwell as passenger. Major Cameron, just returned after some weeks' absence, doing same; Mr. Andreae and Major Cameron doing further flights with Knight in back seat. In the evening, Mr. Wight made his first attempt on mono.; after a few straights with Knight behind, he went off solo, getting well off the ground, and landing neatly. Mr. Knight (pupil) also on No. 3, making good progress. Barnwell and Knight (pilot) flights on No. 5 mono., then Barnwell on same with passenger. Lieut. Blatherwick then good straights on No. 5 at gradually increasing heights. Meanwhile Mr. Andreae, Barnwell behind, doing good circuits in biplane, then solo. Then Mr. Orr Paterson, a new pupil, joy rides with Barnwell on biplane.

Directly fog lifted sufficiently Wednesday, Knight (pilot) on biplane with Major Cameron behind, then this pupil taking front seat for further circuits, then straights and finally circuits solo. Mr. Wight going very strong on No. 3 all the morning. Lieut. Blatherwick flying No. 5 very well, but too misty to start circuit stage. Capt. Wood then on No. 5 for several circuits. Barnwell on No. 5 with Lieut. Blatherwick, and later Major Cameron as passengers. In the afternoon and evening, Barnwell flying No. 5, then with Mr. Orr Paterson on biplane. Mr. Waterfall and Lieut. Blatherwick going strong on No. 3. Mr. Andreae circuits with Knight and Barnwell alternately in back seat, then straights solo. Barnwell on biplane with Messrs. Waterfall and Blatherwick.

Thursday.—Knight (pilot) test flight on biplane, then Mr. Andreae four good circuits at about 200 ft. Mr. Andreae then eights, with Barnwell as passenger, then good eights and glide solo. Knight then took out Mr. Orr Paterson for further practice, then Mr. Andreae solo, making very good eights, and finishing with a very good glide from 150 ft. Barnwell and Mr. Orr Paterson then further circuits, this pupil getting quite used to the control lever, then Mr. Andreae for a few more eights, and practising landing on a mark. In the afternoon, Barnwell on biplane with passengers. Later, testing No. 3 mono., Messrs. Waterfall and Wight then flying same machine very well. Meanwhile Knight (pilot), and Mr. Orr Paterson on biplane, this pupil improving rapidly. Mr. Andreae then took over the biplane, flying several circuits in excellent style. Messrs.

Blatherwick and Waterfall straights on No. 5. Later, Lieut. Blatherwick did excellent circuit at about 300 ft., on same machine, and in clearing another machine in landing, just touched corner of sewage farm, turning machine over, but no damage except to propeller. Knight (pilot) meanwhile taking Mr. Orr Paterson for further instruction on biplane.

Eastbourne Aerodrome.

Tuesday afternoon, last week, Fowler made two solos on the Bristol, and was followed by Gassler on the 35 Blériot. Messrs. Rainey, Morkill and Fry all received instruction in figure eights and right-hand turns. Mr. Rainey, later on, went up for a solo, and spoilt what would have been an excellent flight by pancaking when he landed.

Wednesday, work started at 4.30 a.m., and after a short test flight, Fowler went up in turn, behind Messrs. Rainey, Morkill, Hucks and Roberts. Mr. Fry was also given some instruction. Towards breakfast time, when Roberts and Fowler were up together, flying outside the aerodrome, a connecting-rod broke and let them down. After breakfast, the engine was changed, and Fowler flew the machine home. The weather in the evening was none too good. Fowler made two test flights, but would not give any instruction.

Another good morning's work was put in Thursday. Fowler made a test flight shortly after 4.40 a.m. and then started school work. Messrs. Rainey, Fry, Hucks, Morkill and Roberts all turned up. Mr. Roberts made his first solo, and, after doing two wide circuits in excellent style, finished up with a very good landing. Mr. Rainey then took charge of the machine, and put up a good flight. He had some trouble in landing, however, and, owing to misjudging his distance, was compelled to do a heavy banked turn in order to miss the sheds. Everyone held their breath, as it was a case of touch and go whether he would clear. Luckily he kept his head, and, making what was really a marvellous turn, landed in safety. After this little incident, Mr. Fry was given his first turn in the pilot's seat, and acquitted himself very well. In the afternoon Fowler and Gassler gave some exhibition flights, and a lady passenger was also taken up. During Gassler's last flight, when he was some distance away, the wind got up rather suddenly and brought him down near Polegate. Instead of improving the weather got worse, so the 35 Blériot had to be left out all night.

Monday last about four flights were made, but no school work was possible.

Tuesday Messrs. Morkill, Hucks, Rainey, Roberts and Fowler turned up early, but fog prevented anything being done until about 6.30, when Fowler and Hucks made the first flight. Mr. Roberts made his second solo and flew splendidly, his landing being particularly good.

Liverpool Aviation School, Waterloo.

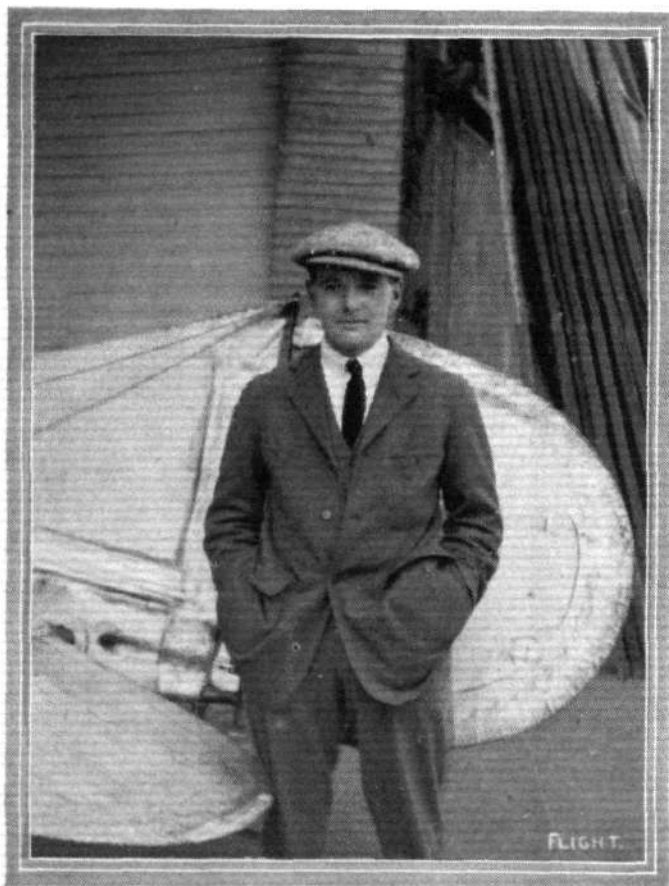
On Tuesday, last week, Birch was out on No. 3 machine doing figures of eight over the aerodrome, but found it too hazy to attempt a flight across country. His fine manipulation had apparently lost nothing from the long period of waiting for favourable weather. On Wednesday, Melly took out No. 2, and started off in the direction of Southport, but on reaching the Alt, 4 miles from Waterloo, the air became far too hazy to proceed, so turning inland over the rifle range he made a wide circle and returned to the hangars after being in the air only about a quarter of an hour.

London Aerodrome, Collindale Avenue, Hendon.

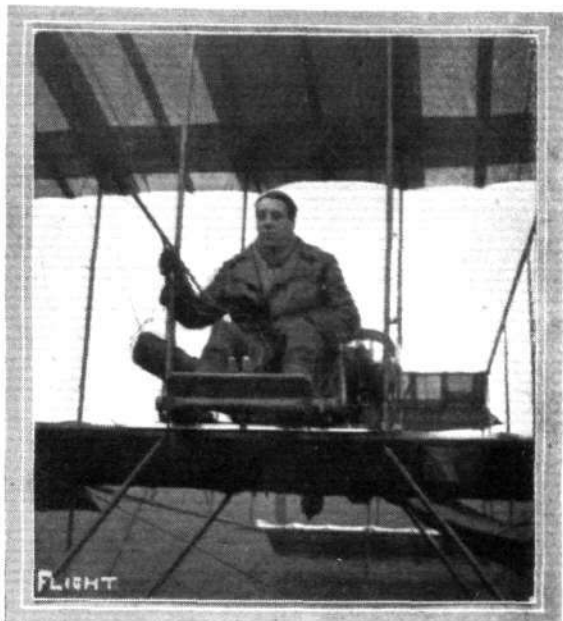
Grahame-White School.—Practise started Sunday morning, last week, at 5.45 a.m., the weather being calm. Mr. R. H. Carr out on No. 7, doing circuits, followed by Mr. Major, at 6.5, doing straights, and Sir Bryan Leighton, the new pupil, rolling for 10 minutes. At 6.45 Mr. Carr was out again doing circuits, while Mr. Major, Sir Bryan Leighton, as well as Mr. Carr, continued practice until the wind got up.

Monday, Mr. Carr out at 5.25 doing circuits, and Mr. Bayetto out on No. 2 monoplane, at 10.40, doing circuits. Mr. Ian Davis also on monoplane, doing straights. The wind then getting up. School work had to be postponed until later in the afternoon. At 4.45, Sir Bryan Leighton doing straights with instructor on No. 7 biplane. While at 5 o'clock Mr. Bayetto was doing circuits on No. 2 monoplane, and continued until quite late in the evening, while Mr. Carr and Mr. Major had further practice on biplane.

Mr. Carr out Tuesday 5.10 a.m. doing circuits and practising landings at each round. Mr. Major doing straights and subsequently half-circuits. Sir Bryan Leighton at 6.30 doing straights with instructor. Later in the afternoon, Mr. Birchenough, who has been unable to indulge in much practice lately, again doing circuits under the instruction of Instructor Manton. Later in the evening, at 7.5, Mr. Major doing straights, as well as Sir Bryan Leighton and Mr. Carr. Flying continued this day until 7.30, the weather being very good.



Mr. Richard Norton Wight, another pilot who has just passed the Royal Aero Club tests for his certificate in good style at the Vickers Flying School, Brooklands, on a Vickers biplane.



Lieut. E. Peirse, R.N.R., one of the recent successful pupils for his *brevet* at the Bristol Flying School at Brooklands.

Mr. R. H. Carr, taking No. 7 school machine out, Wednesday, at 5.20, and continuing doing circuits for no less than 20 mins., flying very well. At 5.45 new pupil, Mr. J. D. North, doing straights on school biplane under Instructor Cheeseman, while at 6.0 Mr. Major took over the machine and continued doing straights. At 6.15 Mr. Lan Davis went out on No. 2 monoplane just as it had been tuned up ready for Mr. Bayetto to take his *brevet*, but, unfortunately, owing to an error of judgment, he fouled the hangar at the termination of his flight, and also gave the hull of a motor boat, which was standing by, rather a lot of trouble. The pupil was flying well, but left the landing until too late. At 6.25 Sir Bryan Leighton doing straights with Instructor Cheeseman for half an hour until Mr. Carr took over the same machine, doing straights and practising landings in the rising wind. At 7.15 Mr. J. D. North with Instructor Cheeseman doing straights, as also Mr. Major.

Thursday. Mr. Major out at 5.25 doing straights and half circuit under Instructor Cheeseman, followed by Mr. Carr, who continued circuits for 20 minutes. Mr. Carr was flying extremely well, at *brevet* height, banking well and making good landings *en vol plané*. At 6.5, Mr. J. D. North out with Instructor Cheeseman, and doing well, having control most of the time. Sir Bryan Leighton and Mr. Major subsequently out with Instructor Cheeseman, followed at 7 o'clock by Mr. Carr, out for another 10 mins., doing circuits, although the wind was rising and becoming rather puffy. Later in the day, towards evening, Sir Bryan Leighton doing straights with Instructor Manton in passenger seat, followed by Mr. Major, also doing straights.

Puffy wind, Friday and Saturday, prevented any schoolwork.

Blériot School.—Last week was not conspicuous for good flying weather, and only on three occasions were pupils able to do any outside work. On Monday, Mr. Williams had No. 1 out for rolling practice, but could not make much headway against the wind and the machine had to be returned to the sheds. Tuesday was blank, but on Wednesday Mr. Clappen tried a short flight on No. 3, but found the wind too strong for anything but straight flights. In the evening, Mr. Hamel, accompanied by Miss Trehawke Davies, arrived from Dover at 6.30 p.m., strictly to time, on Miss Davies' 70-h.p. tandem 2-seater.

On Thursday evening, Messrs. Williams and de Villiers were both out at rolling practice, but found the wind too trying, during which time Mr. Slack took out the No. 5, with the 50-h.p. Gnome, for trial, and found the motor much better. Friday and Saturday were too windy for school work, nothing being able to be done.

British Deperdussin School.—Mr. Spratt out at 11 a.m. Tuesday, last week, testing new warp control on 60-h.p. two-seater for 20 mins. He then took the Rev. Clement Prior for a joy ride of several circuits, followed by Mr. Bauman for 10 mins., and Mr. Whitehouse for 20 mins. In afternoon, Mr. Spratt took up Capt. Halahan to test climbing power with big load—pilot and passenger both weighing well over 13 stone each. The machine climbed splendidly, but trip was cut short by breaking of a bracing wire, causing vibration. Later, Mr. Spratt gave Mechanic Barrs joy ride, and landing on up-grade unfortunately broke skid, which touched propeller breaking same. Mr. Barron 35 mins. on No. 2,

doing straights, at 6.15 a.m. Wednesday, putting in some very good work.

School started 6.30 a.m. Thursday, being delayed by fog. Mr. Jones (new pupil) had his first lesson, rolling for 15 mins., doing quite well for a start. Mr. Hudson rolling and hopping for 5 mins. Wind sprang up and stopped work. In afternoon Mr. Spratt took No. 5 up to 800 ft. for a test, then handed over to Mr. Whitehouse who put up a splendid exhibition flight on the little 35-h.p., taking her up to 3,500 ft. without any difficulty, finishing with a good glide and excellent landing. Mr. Spratt then took up same machine to well over 3,000 ft. again. A fine performance, ending with left and right spiral *vol plané*.

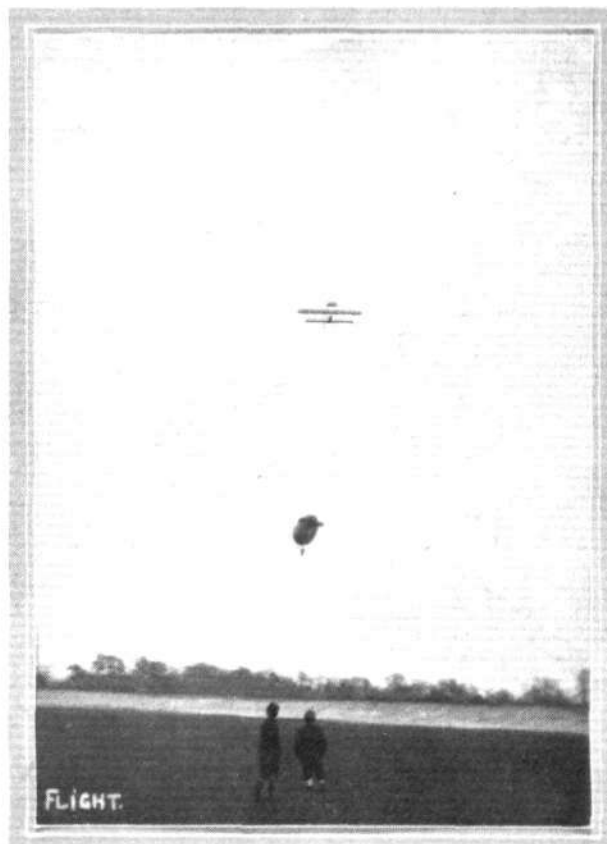
Friday, Saturday and Sunday too windy for work.

W. H. Ewen School.—The opportunities for pupils' work have not been too great last week, but notwithstanding, a considerable amount of useful practice has been put in at the school.

On Monday, the weather was against early morning work, but the pupils were out at 4.15 in the afternoon. After a short test flight by M. Baumann on the 35-h.p. Caudron No. 2, Lieut. G. Adams put in some good practice in straights. Messrs. Gist and Goodden were on the same machine doing several good short flights. Mr. L. W. F. Turner was on the 35-h.p. Caudron No. 1, after which he was instructing Messrs. Zubiaga and Stewart, who were respectively getting in excellent straights and half circuits.

Turner and Baumann were doing test flights on Tuesday at 5.30 a.m. on the 35-h.p. Caudrons Nos. 1 and 2. Quite a good morning's practice was put in by the pupils, Mr. Stewart flying splendid circuits and showing himself almost ready for *brevet* tests. During the afternoon Mr. Turner put up a good exhibition on the *brevet* Caudron, while he was also out on the 60-h.p. Caudron doing some fine exhibition flying and passenger carrying.

On Wednesday the pupils were out at 5.10 a.m. under the instruction of Mr. Turner and M. Baumann. Lieut. Adams and Mr. Goodden were making capital progress in straight flights on 35-h.p. Caudron No. 2, Messrs. Warren and Zubiaga good straights and half circuits on No. 1 Caudron, with Mr. Stewart doing some steady flying on same machine. During the day there was rather too much wind for the pupils to be out. Turner and Baumann were out with the 35 Caudrons trying friendly races round the pylons. After a while Baumann made a nice tour of the surrounding country, finishing with a well-judged glide from 1,500 ft. Throughout the day Turner made several solo and passenger flights on the 60 Caudron. During the afternoon Mr. Ewen was out for a few short flights on the 60, taking Mr. Gist as passenger.



Mr. F. Warren Merriam flying over the Army airship "Delta" on one of the Bristol biplanes on April 23rd at Brooklands.

The pupils were out at 5.30 a.m. on Thursday. After test on No. 1 Caudron by Mr. Turner, several circuits in excellent style were flown by Mr. Zubiaga. Baumann was on No. 2 Caudron, making a fine flight and finishing with a spiral from 2,000 ft. Lieut. Hicks and Mr. Prosser were rolling and hopping on same machine, while Mr. Frank Goodden was doing some good straight flights.

During the afternoon, Turner and Baumann were making some nice flights on Nos. 1 and 2 Caudrons, and Mr. Turner was also making several flights solo and with passengers on the 60-h.p. Caudron.

Temple School.—On Wednesday, last week, under Mr. G. L. Temple's supervision, R. Penny and M. Larce were out on mono. No. 2, Mr. Lance flying a straight in promising style. Lieut. Maurice Ambler joined the school, and was given his first lesson in controls. The next day, under Mr. Temple, A. Vaile was rolling on mono. No. 2 for 10 mins. In the afternoon, Mr. George L. Temple came out on the Caudron and gave an exhibition flight, later, at dusk, flying again in fine form on the same machine. Owing to weather conditions, pupils have been confined to constructional work in hangar for the remainder of the week.

Salisbury Plain.

Bristol School.—Pixton was first out for solo on the new Bristol tractor biplane on Monday last week, afterwards giving tuition to Messrs. Marshall, Gipps, and Lieut. Chidson in a biplane. Busted was, meanwhile, up with Mr. Delaplane and later with Lieut. Verdon, R.N. Wind increased and conditions too bad for pupils. Later in the day Pixton was out for a trial but still found things rather bumpy. Afterwards Lieuts. Verdon, R.N., and Chidson were each given a couple of flights, Busted taking up Messrs. Marshall, Gipps, and Delaplane. Wind again stopped school work.

On Tuesday, Pixton was out first thing for a long solo on the new Bristol tractor biplane, finding clouds at 3,000 ft. Mr. Tower ascended for his first solo in a biplane, flying for 10 mins., and landing well. Mr. Marshall was taken for biplane tuition by Pixton, flying round Knighton Downs for 15 mins., and later for 10 mins. round Fargo. Mr. Marshall then set out for his first solo, and made a creditable flight, remaining aloft for 10 mins., landing well. Mr. Delaplane was undergoing tuition at the hands of Pixton, the pupil taking charge of the hand control. Mr. Tower was out for a good solo for 10 mins. Thick mist gathered in, and flying was thus rendered impossible.

About midday conditions improved, the fog lifting. Busted went for a trial, but found too bumpy for pupils. At 3 o'clock Busted was again out for a couple of trips in a Bristol sociable monoplane. Pixton giving tuition to Lieut. Chidson and Mr. Gipps. Heavy thunderstorm drove everyone to seek shelter. Later Pixton giving tuition to Mr. Gipps and Mr. Delaplane (twice) and Lieuts. Chidson and Verdon, R.N. (a new pupil), the latter having a long flight. Lieut. Chidson was taken for a trip by Pixton for landing practice, and then ascended for his first solo, later going out for another, making a really good show. Messrs. Marshall and Tower each out for solos, Busted meanwhile making his first flight on the new Bristol tractor biplane, making two lengthy trips altogether. Pixton on the same machine, taking in turn Lieut. Chidson and another passenger. Busted took Lieut. Chidson and Mr. Gipps for biplane tuition.

Pixton was away early on Wednesday giving biplane tuition to Mr. Delaplane for 10 mins., the pupil having charge of the hand control. Messrs. Marshall and Tower each made a solo of 10 mins. Pixton took Lieut. Chidson for solo of 8 mins., Mr. Delaplane also being taken for a tuition flight. Rising wind terminated further work. In the afternoon Pixton took Mr. Delaplane in a biplane. Lieut. Chidson and Mr. Marshall each made a biplane solo in fine style, both flying at 300 ft. for about 10 mins. Pixton took Capt. Allen for a flight in the new Bristol tractor biplane. Mr. Tower was up for a good solo, Busted making a short flight in the side-by-side, then setting out for Upavon. Mr. Tower satisfactorily passed the necessary tests for his certificate, his altitude being about 600 ft. and his landings *en vol plané* were particularly fine. Lieut. Chidson and Mr. Marshall were both out for good solos, Busted taking Mr. Delaplane for biplane tuition.

Mr. Marshall was early up for a solo on Thursday, after the usual tests, flying well at 400 ft. for 15 mins. Pixton gave Mr. Delaplane tuition, including plenty of landing practice, whilst Lieut. Chidson made a long flight, circling Knighton Downs, and Fargo at 500 ft. Pixton again out with Mr. Delaplane for a couple of trips of 10 mins. Lieut. Chidson and Mr. Marshall each ascended for 8 min. solos. Busted finished the morning's work with a solo on the new Bristol tractor. Tuition was not commenced until well into the afternoon. Pixton gave biplane tuition to Lieuts. Verdon, R.N., and Priestly, R.N., and Mr. Delaplane, also another pupil. Darkness prevented further tuition.

Much rain and wind all day on Friday. Outdoor work impossible. Things busy on the machines in the hangars.

Pouring rain and wind all day on Saturday. Flying out of the question, and all hands erecting and tuning up new machines.

Royal Flying Corps (No. 3 Squadron).—Tuesday, of last week, opened fine, and Lieut. Cholmondeley on Maurice Farman 214, with Sergt. Bruce as passenger, was first out for tuition. Lieut. Ashton took over biplane for a flight, and Lieut. Anderson on BE 272 made three flights, one with Air-Mechanic Powell as passenger; Lieut. Porter, two flights, one with Lieut. Campbell as passenger. Lieuts. Wadham and Chrystie each taking turns on BE biplane 272. In the evening, at 6.30, Capt. Connor arrived from Farnborough on Maurice Farman 270, having done the journey in 40 mins. with the wind behind him. Lieut. Ashton up on Maurice Farman 214, with Air-Mechanic Smith as passenger. Major Moss, on Maurice Farman 269, made three good flights, one with Air-Mechanic Bobby. Capt. Allen and Lieut. Wadham each out on BE biplane 273. Lieut. Anderson on BE biplane 272, with Air-Mechanic Steed as passenger. Lieut. Anderson then went for a trip to Salisbury and back. At 6.45 Lieut. Hubbard arrived from Farnborough on Henry Farman 275, and Major Higgins and Lieut. Cholmondeley subsequently made good flights on this machine.

On Wednesday, Lieut. Cholmondeley started off on Maurice Farman 214 with Sergt. Bruce, and the sergeant then took charge of biplane and made a good flight of 15 mins., ending with a perfect landing. Sergt. Ridd then took over 214 and put up two fine flights, after which Lieut. Ashton made one scouting flight round the downs. Major Moss, on Maurice Farman biplane 269 two flights, Lieut. Anderson on BE biplane 272 a short cross-country flight. Lieut. Chrystie, Major Higgins, and Lieut. Cholmondeley each one flight on BE 272. Major Higgins, on Henry Farman 275, with Lieut. Allen as passenger, after which Lieut. Allen made two solo flights on 275. In the evening, Lieut. Cholmondeley was out on Maurice Farman 214 with Sergt. Bruce, and went over to Knighton Downs in order that Sergt. Bruce might fly for his certificate, which he qualified for in splendid style. Major Moss on Maurice Farman 269 with Lieut. Body, R.F.A., as passenger, then Lieut. Ashton, also on 269, with Lieut. Wissmann as passenger, and afterwards with Air-Mechanic Carter. Sergt. Ridd on Maurice Farman 270 with Air-Mechanic Eley went to Andover and back in 45 mins., and then took up Sergt. Kesting, and also gave rides to Air-Mechanics Howard and Hill. Lieut. Wadham on BE 272 took off to a height of 4,960 ft., and Lieuts. Anderson, Porter, and Chrystie each made good flights on the machine. Lieut. Allen and Major Higgins also made several passenger trips on Henry Farman 275.

On Thursday morning, Lieut. Ashton and Sergt. Ridd kept the Maurice Farman 269 busy. Lieuts. Cholmondeley and Allen were out on Henry Farman 275, and Capt. Allen and Lieut. Wadham on BE 272, on which Lieut. Anderson took Air-Mechanic Ware to Andover and back. Major Higgins, on Henry Farman 277, took Lieut. Chrystie as passenger to a height of 1,800 ft., firing off coloured rockets, and later in the morning they were observing artillery firing and doing more signal practice. Sergt. Ridd out on Maurice Farman 270. In the evening Lieut. Anderson was out on BE 272. Lieuts. Porter and Cholmondeley on Maurice Farman 270, the latter with Capt. Connor as passenger, were firing rockets at a height of 1,100 ft. Major Higgins on Henry Farman 275 rose to a height of 1,500 ft. in 3½ mins. Lieut. Allen also made two flights. No flying on Friday, Saturday, or Monday owing to winds.

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Whit-Monday at Brooklands.

IN connection with the car race meeting at Brooklands there will be the usual cross-country handicap for aeroplanes. It will be open to all classes of machines and will be over a distance of about 12 miles. The prizes are £50, £25 and £10, or cups at option. Entries close to-day, Saturday, and the fee, £1, will be returned to starters.

Eiffel's "Resistance de l'Air" in English.

MANY students of aviation will be interested to hear that Messrs. Constable announce that they have ready for immediate publication an English translation of M. G. Eiffel's famous book, "Resistance de l'Air," which gives results of a large number of experiments made in M. Eiffel's splendidly equipped laboratory at Auteuil, near Paris. The translation is the work of Mr. J. C. Hunsaker, of the U.S. Navy Yard, Boston.

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THE prehistoric remains of Gloucestershire have been always a centre of great interest, and the new book, "Salisbury Plain: And its Stones, Cathedral City, Villages, and Folk," will add considerably to that interest.—*Westminster Gazette*.

Perhaps the fact that Salisbury Plain recently has become a "flying ground" may account for its abrupt transference to Gloucestershire.—*London Opinion*.

ARMCHAIR REFLECTIONS.

By THE DREAMER.

The Humorous Scot.

I HAVE always understood that Scotsmen have no part of their "grey matter" set apart for the absorption of jokes, and having no data to go upon, I have thought that perhaps it was so. A joke is a joke, however, only to those who can see it as such, and if it does not appeal to them, nothing in the world will make it appear as one. It is quite possible, of course, that the jokes of the "canny Scot" are so subtle that we case-hardened Englishmen cannot grasp them, and that they think what we consider jokes illogical imbecilities. After reading the *Glasgow Daily Herald* of April 23rd, I do not feel quite sure which way it is. It may be that what I have read is not intended for a joke at all, but is straightforward business. On the other hand, it appears that perhaps they are pulling somebody's leg.

It seems that an aeroplane manufacturing company has applied to the Perth Town Council for their permission and support in holding a flying exhibition at that town. To start with, the proposition was considered at a meeting of the "Burial Grounds and Inches Committee." After discussion it was pointed out that they had no power to barricade off any part of their "Inches" for that purpose, and suggested (among other places) that the Hillyland Skating Pond might be suitable.

It is probable that to a Scotsman this is quite understandable language, but owing to my abysmal ignorance as a judge of Scotch in any shape or form, I must confess that I don't know whether it is intended for a joke or not. I have no doubt, however, that before many hours have

passed, some staid old gentleman from beyond the Tweed will write to tell me that he doesn't see anything at all funny in it, and point out that what has been said is quite correct. I can only see it with the eye of a silly Southerner, with no knowledge of inches, except as the twelfth part of a foot; and, as to the skating pond as an aerodrome, unless for waterplanes, I confess I don't quite grip it. The possibility of it being a joke or otherwise is about on a par with the tale told of Arthur Roberts. He (so the story goes) once got the idea into his head that it was a pity the impromptu jokes he made on the stage should not be preserved, so he paid a gentleman a fair sum to sit in one of the stage-boxes and take them down in shorthand. He chose a Scotsman for the job, because he only wanted those recorded which were capable of getting right home. At the end of the week this gentleman handed in his note-book, and, taking his fee, walked out with a solemn face. On opening the book it was found to be without writing of any sort—except on the last page, where, over a penny stamp, was written: "Received salary for week ending so-and-so!" I understand "Arthur" had to sit down and think it over.

The Fascination of Danger.

There does not seem to be much reason to doubt that the fascination of danger plays a very great part in attracting men to many, if not all, sports and pastimes where it is ever present. To go out and shoot a lion, it seems to me, would not provide greater sport than shooting a rabbit, were it not for the element of danger



THE PROPOSED MARSEILLES-ALGIER FLIGHT.—Tired out, waiting for the wind to drop. Left to right: Madame Fischer, Mr. G. Holt Thomas, MM. Seguin, Fischer, Fabre (of float fame), and mechanics.

It is danger, under the name of sport, that men seek when they take the field. Next to danger, the thing that attracts is "wander" or travel. Travel has a kind of exotic exaltation: exotic because it must of necessity be foreign—by which I mean away from one's usual surroundings—and exalting because undoubtedly there is an indefinable intoxicating influence associated with visitation to foreign parts, which, once tasted, dominates one's sub-conscious mind to almost the exclusion of all else.

"Beyond the East, the sunrise,
Beyond the West, the sea,
And, East to West, the wander thirst
That will not let me be."

That the element of danger is present in flying none will seek to deny, though not to the extent that is generally supposed. Indeed, it is well that it should be so, as otherwise flying would lose much of its fascination. Man was ever a hunter, and it is the desire for conquest that predominates in the human mind, male or female. What can be easily obtained is not wanted. What is difficult to get, or overcome, is most desirable. The fascinating spirit of danger, travel and conquest will not be denied, but grips the mind in exhilarating ecstasy.

In flying we have these three things, danger, travel, conquest, ever present—travel and conquest constant, danger, I am pleased to say, only intermittent; but the two will always out-weight the other, and the other is also necessary for the reasons that I have already stated. That there is no danger of the one over-riding the two is proved almost too often. Not so long ago we lost a pilot whom we could ill afford in Geoffrey England, yet Gordon England flies on as ever; while the letter of England *père* to the critics was only equalled by the glorious letter of Miss Hamilton after the death of her only brother. These are only two of those we mourn, but the same applies to all.

Only this week I have received a letter from poor little Desoutter, written from his hospital bed, saying that as soon as he is able he will return to Hendon and flying, even though handicapped with an artificial limb. There is surely nothing in this wide world, with the possible exception of war, useless, wasteful and wicked, so calculated to bring out the true "manhood" of man as flying.



AERONAUTICAL SOCIETY OF GREAT BRITAIN. Official Notices.

Elections.—Members: Maurice Ducrocq and C. R. Fairey. Associate members: Capt. S. W. Beeman, Col. Fergusson, the Right Hon. The Lord Saye and Sele, and Lancelot L. Vigers.

Election of Chairman.—Maj.-Gen. R. M. Ruck, C.B., R.E., has been elected Chairman of the Council for 1913-14.

Appointment of Committees.—The following committees have been appointed:—

(a) *Finance Committee*—Griffith Brewer, J. M. Ledeboer, Handley Page, and Maj.-Gen. R. M. Ruck.

(b) *Inventions Committee*—T. W. K. Clarke, B. G. Cooper, and Col. H. E. Rawson.

(c) *Library Committee*—H. F. Lloyd and B. G. Cooper.

(d) *Relations Committee*—A. E. Berriman, F. Handley Page, and Maj.-Gen. R. M. Ruck.

(e) *Research Committee*—Harris Booth, T. W. K. Clarke, B. H. Cooper, Col. J. D. Fullerton, B. Melvill Jones, Archibald R. Low, Mervyn O'Gorman, F. Handley Page, and A. P. Thurston.

Meetings.—The twelfth meeting of the present session will be held on Wednesday, May 7th, at the Royal United Service Institution, Whitehall, when Col. H. E. Rawson, C.B., R.E., will read a paper, to be followed by a discussion, on "Atmospheric Waves, Eddies and Vortices." Dr. H. N. Dickson, D.Sc., President of the Royal Meteorological Society, will preside.

"The time has come, the Walrus said, to speak
of many things."

I wonder what will be the upshot of the meeting at the Mansion House next Monday, when London is supposed to be going to speak out and say what it has to say, with reference to our aerial defence.

In my paper to-night I read, "Hundreds of applications for tickets are reaching the Navy League, and for every one granted, five or six have to be refused. Sixty M.P.'s and sixteen mayors will be present, and there will be several admirals, including Lord Charles Beresford, Sir Charles Ottley, Sir E. Seymour, and Sir John Hopkins."

I have not the slightest wish to criticise the Navy League, even if I were in the position to do so; but with six being refused for every one granted, I do hope they are taking into consideration the worth of the ones to be present—with regard to their ability to judge and speak on the subject in hand—and not allowing mere social position to have any influence. It always seems to me that at these meetings so many people have to be included, whether they are in a position to do any good or not, simply because, owing to their positions, it would be thought an act of discourtesy not to invite them—often to the exclusion of others eminently able to give expert opinion and weight. Sixteen mayors sounds very nice, and no doubt will make a fine show. Whether the whole, or any of them, know much about aerial defence I, not knowing them, cannot say. I have only been personally acquainted with two mayors in my little journey through this wicked world—one was a butcher, and the other sold wood; and, as it was before the days of aeroplanes and airships, I don't know how they would have shaped in the matter.

Sixty M.P.'s appears all right, and as they have been elected to Parliament for their supposed ability to govern this country, no doubt the choice in this direction is well placed, though I fail to find they have made any great show in this same question at the other end of the embankment. I only hope to goodness they will do the right thing now, and not go blindfold at it like a bull at a gate, and propose everything and second what's left. No doubt the Navy League are taking a step in the right direction, in all probability the only one they can take at the moment, but the business wants approaching with caution and aforethought. Navy League, you are doing your best.



Wilbur Wright Memorial Lecture.—Mr. Horace Darwin, F.R.S., will deliver the first Wilbur Wright Memorial Lecture, under the auspices of the society, at the Royal United Service Institution, at 8.30 p.m. on Wednesday, May 21st.

Those wishing to join the society prior to the lecture are requested to send in their application forms immediately, so that their names may be put forward for election at the next council meeting.

Ghent International Exhibition.—By arrangement with the Board of Trade, the Aeronautical Society have lent the Pilcher glider and a collection of old prints, photographs and posters for exhibition in the British Aeronautical Section of the Ghent International Exhibition.

Library.—The Council desires to thank Mr. Eric H. Clift for the gift of a set of eight aeronautical maps, "Aerodrome to Aerodrome."

BERTRAM G. COOPER, Secretary.



A Motor Spherical Balloon.

RECALLING the balloon with which M. Santos Dumont proposed to take part in the 1906 Gordon-Bennett Balloon Race is an experimental balloon with which M. Prince has been experimenting at Lamotte Breuil. The envelope is of 1,000 cubic metres capacity, and a six-cylinder motor is arranged in the basket, driving three propellers, viz., a four-bladed one in front, a smaller one at the back for steering purposes, while a third propeller is placed horizontally to assist the balloon in rising.

QUESTIONS IN PARLIAMENT.

IN the House of Commons on the 23rd ult. Mr. Hunt asked the First Lord of the Admiralty what steps had been taken by the Government to prevent London, or any of our big towns or naval dockyards, from being bombarded at night from the air by the big airships of a foreign nation.

Mr. Churchill: Although the Admiralty is taking an active interest in the question so far as the naval establishments are concerned, matters relating to passive defence are controlled by the War Office.

Mr. Hunt also asked the First Lord of the Admiralty whether he could say what amount of money was provided in the present Estimates for building large dirigibles, equal in power and speed to the German Zeppelin type; and what amount of money was provided for the necessary sheds for housing them.

Mr. Churchill: No money is provided in the present Estimates for building aircraft of the type referred to. Provision has been made in the Estimates for the building of sheds, which is the essential preliminary to the acquisition of such vessels, but it would not be in the public interest to name the amount.

Mr. Hunt: Is the right hon. gentleman aware that Germany already has twelve big airships, and has provided £900,000 for building more in the next twelve months?

Mr. Churchill: The Admiralty is not unprovided with information on that subject.

Mr. Joynson-Hicks: Is the right hon. gentleman aware that sheds do not take a tithe of the time to build as airships themselves do?

Mr. Churchill: I should be glad to have a proposal for the construction of sheds in a tenth part of the time it takes to construct an airship.

Mr. Joynson-Hicks asked the Secretary for War whether his attention had been called to the proposal to establish a volunteer flying corps at Liverpool, and whether he would be prepared to recognise and encourage the new organisation so soon as private generosity had provided the necessary equipment?

Col. Seely: A notification of the proposal has been received, and is now under consideration.

Mr. Joynson-Hicks also asked a long question regarding the number of aeroplanes ready to start for war at an hour's notice now in the possession of the Royal Flying Corps, how many were in possession of the various squadrons, and how many had been damaged since April 1st.

Col. Seely in replying said it was not considered to be in the interest of the public service to publish the required information, but he would be happy to give to two representatives on the Opposition side of the House of Commons the information which he gave to Lord Montagu of Beaulieu.

To another question by Mr. Joynson-Hicks regarding the accident to the new Government-built fast biplane, Col. Seely replied: The accident was not due to any inherent instability. I regret to say that Second Lieut. de Havilland, who has rendered great service in flying different types of machines, was hurt. He is, however, expected to be out of hospital in a few days, and is not, I understand, seriously injured.

On the 24th ult. Mr. Hunt asked the Prime Minister whether people all over the country were becoming seriously alarmed at our defencelessness against attack from the air, and what steps the Government proposed to take to make up for their past neglect to provide us with the means of aerial attack and defence.

Mr. Asquith: This question has received and is receiving the continuous attention of His Majesty's Government. I have nothing to add to the statement of the Secretary of State for War in the matter.

Mr. Hunt: In view of the fact that we have not got any big airships, and are not going to have any, are we to understand that we are to be left defenceless against attack from airships of an enemy which, apparently, can be used at night to drop high explosives on to our docks and buildings?

Mr. Asquith: The whole matter is receiving the careful attention of the Government, who have the best experts.

Mr. P. Pease asked the Secretary for War the reason why the Clement-Bayard airship, which travelled from Paris to London in record time, was not further used by the War Office.

Col. Seely replied: I have stated previously that this airship was dismantled because it was unserviceable. Since the question has been raised again, I may say that it was found, in the first place, that the airship was not new when bought, having been used in the autumn manoeuvres in France on trial for the French Government, and, in the second place, that the envelope leaked very badly, to the extent of 12,000 cubic feet of gas per day, so that it would have cost

about £135 a week to keep it inflated. It appeared also that the speed of the airship was not over 33 miles per hour, and that it was slow on control compared with our standards.

On Tuesday, Capt. Faber asked the Secretary for War whether aeroplanes could only fly at the rate for which their engines were made, whether the pace could in any way be regulated by the pilot, and how many first-class pilots were required for each aeroplane.

Col. Seely replied, that all aeroplanes were capable of some variation in speed, but the amount of variation depended on the design of the aeroplane and the type of the engine. On the present system, 24 first-class pilots and 12 aeroplanes were allotted to each squadron.

In the House of Lords, Lord Montagu of Beaulieu asked the Government whether a return could be laid upon the table showing the number of (1) dirigibles, (2) aeroplanes, (3) hydro-aeroplanes now possessed by the chief countries of the world, and the amount of expenditure for military and naval aviation proposed during the year from May 31st, 1913.

We could no longer afford, he said, to ignore the developments in aeronautics that were taking place, and it was imperative for the Government to consider the question as it now stood, in view of what other powers were doing, and also what were the possibilities of the future.

A stage has now been reached when dirigibles and aeroplanes could no longer be looked upon merely as agencies for scouting. Although he believed that for some years to come scouting would probably be their chief purpose, yet they were becoming available as a means of offence. He had recently seen a design for a dirigible that would lift ten tons. If only five tons of explosives were taken up and dropped in certain places it would effect ruin and havoc that could hardly be paralleled by any kind of artillery. Having regard to the great range of dirigibles, there was hardly a large centre in the country that was not liable to suffer damage from explosives dropped from above. It had been said by those who wished to minimise the danger that we possessed guns which could shoot vertically, and so bring down dirigibles. It was possible that the time would come when there would be shells to burst in the air at a high altitude and seriously damage dirigibles, but that time was some way off, and he was informed that on the Continent it had been found that it was only for very local and partial purposes that artillery could be used with any effect against dirigibles.

The only proper way of dealing with the situation was to meet like with like. If we were likely to be in danger of invasion by dirigibles or aeroplanes we ought to have an adequate number of both to meet that danger. In the matter both of aeroplanes and dirigibles, specially the former, we were behind the other Great Powers, but he thought that was a matter which could be remedied to a certain extent. He agreed that it was not wise to spend a great deal of money on any one type of dirigible or aeroplane at the present moment, but it was essential that we should train men for the service who would be available in time of war. At the present moment the War Office had three dirigibles and the Admiralty two. The War Office could claim between 110 and 120 aeroplanes, and the Admiralty about 75 hydro-aeroplanes. Of the aeroplanes, a deduction of about 25 per cent. must be made as the proportion which would be out of order at a given time.

It was as regards pilots that the situation was more serious.

If we were to have an efficient air service it was necessary to have a margin of at least 50 per cent. of pilots. He suggested that in this connection something in the nature of the French system might be considered. In that country not only did the officers and men receive a special rate of pay, but also a sort of gratuity for the number of hours spent in the air and the number of miles flown. This amounted to a considerable remuneration in many cases, and was an inducement to men who had to consider their financial responsibilities. He did not think we had half enough training schools. We could only train 120 pilots a year, and that was a ridiculously small number. What was required was the establishment of military stations in various parts of the country. A great many more hangars and additional housing accommodation were also much needed, as there was not half enough such accommodation at the present moment.

A comparison of the aircraft strength of the different countries showed that Germany had fourteen publicly owned and ten privately owned dirigibles, twenty-four in all. It was difficult to ascertain the number of aeroplanes, but his information was that Germany had about 420 and twenty-five hydro-aeroplanes.

France had twenty publicly and privately owned dirigibles and 585 aeroplanes, the largest number owned by any foreign Power.

Russia was a difficult country from which to obtain information

but he believed she had twelve airships, public and private, and upwards of 200 aeroplanes.

Austria had four public and two private dirigibles, and 135 aeroplanes.

Spain, Italy, Servia, and Japan each had both dirigibles and aeroplanes, and were providing in this year's estimates for a larger expenditure.

Germany proposed to spend in the coming year £7,000,000 on dirigibles and aeroplanes; France, £1,500,000; Great Britain, £501,000; Italy, £450,000; Japan, £250,000.

In view of these figures he hoped the Government would realise what was being done, and, remembering that we were really only

at the beginning of huge developments in this direction, would give the matter very serious consideration.

Earl Beauchamp assured the noble lord that the various points he had raised should be duly considered by the War Office. With many of his remarks they all wished to associate themselves, and especially with a tribute he had paid to those gallant men who were always ready to risk their lives in this service. As to the return, the noble lord had really supplied it himself, but he would certainly refer the matter to the War Office, and would ask them whether they were able to improve upon the figures given by the noble lord.

Lord Montagu of Beaulieu thanked the noble lord for his promise, and withdrew his motion.

FOR THE POMMERY CUP.—MARVELLOUS FLYING.

Gilbert's Great Non-Stop Flight.

As the end of each six month's competition for the half-yearly Pommery Cup draws near, the fight to be the winner of this prize becomes more keen every time. In our last issue were given the particulars of the fine flights of Daucourt and Audemars and others, but these have since been completely eclipsed by later and much finer performances. The next advance was made on the 24th ult., when Eugene Gilbert, on a Morane-Saulnier monoplane, fitted with a 60-h.p. Rhone motor and Integral propeller, started from Villacoublay at 5 a.m., with the intention of flying to Madrid, resulting in a marvellous non-stop trip of 900 kiloms. (about 604 miles) to Vittoria, the last 300 kiloms. or so being flown through rain. After passing Bordeaux, Gilbert hesitated as to whether he would cross the Pyrenees before stopping, but eventually, rising to a height of 3,000 metres, he decided to go on, and landed safely at Vittoria, where he was able to obtain replenishments and to enjoy a rest, although he stated that he was no more fatigued than his motor. His time for the trip from Paris was 8 hrs. 23 mins., and on arriving at Vittoria he still had sufficient fuel for another two hours flying. After a couple of hours he re-started in the direction of Burgos, but between that point and Valladolid he found the wind very troublesome. He struggled on, eventually landing at Medina del Campo, to the north-east of Salamanca, and 1,020 kiloms. in a straight line from Villacoublay, although, on account of *détours*, &c., he must have covered nearer 1,100 kiloms. His landing at Medina del Campo was greatly impeded by the mass of people who, never having seen an aeroplane before, flocked round and left very little room for the machine to come down. The result was that the machine was somewhat damaged, and Gilbert found it impossible to go on.

Legagneux Also Has a Try.

ABOUT twenty minutes before Gilbert started from Villacoublay, Legagneux started also on a Morane-Saulnier monoplane, but with Gnome motor and with the same objective of getting to the Spanish capital. Legagneux had arranged to make a first stop for replenishment at Poitiers, and when he reached that point everything was going well. After a stop of fifty minutes he continued on his way but was overtaken by such heavy rains at Angoulême that he decided to

wait awhile there. On the weather clearing he went on again, but then found the mist too thick, and so decided to abandon the attempt at Barbezieux, after covering over 480 kiloms.

Guillaux's Record Flight.

GILBERT'S lead in the Competition only stood for four days, as on Monday Guillaux gained first place, and as his record was not beaten on Wednesday, he will probably be awarded the Cup. Starting from Biarritz, on the all-steel Clement-Bayard monoplane, which has a 70-h.p. Clerget engine and Integral propeller, at 4.42 a.m., Guillaux steered for Bordeaux and covered the 180 kiloms. in 1 hour 13 mins. After a forty minutes' rest he started again and this time made a non-stop flight to Villacoublay, arriving there at 10.35, having taken four hours for the distance of 495 kiloms. This time a rest of two hours was indulged in before proceeding to Ath, in Belgium, where he arrived at 2 p.m., by which time he was 900 kiloms. from his starting point. Another two hours' rest was enjoyed and then the last stage commenced, the aeroplane after crossing the Zuyder Zee finally landing at Kollum, in Holland, at 7 p.m., his distance record then being 1,255 kiloms.

Audemars has Another Try.

ON Monday Audemars also had another try for the Cup over the Paris-Berlin route, intending to continue beyond the German capital in the direction of Warsaw. Starting from Villacoublay at 4.39 a.m. he landed at Charleville at 6.40 and after a stop of only twenty minutes went on to Dusseldorf where he landed at 9.30. An hour later he was once more on the wing but his petrol gave out at Bitterfeld in Hanover and he had such difficulty in getting a supply in time to go on that he decided to give up, after having covered 700 kiloms.

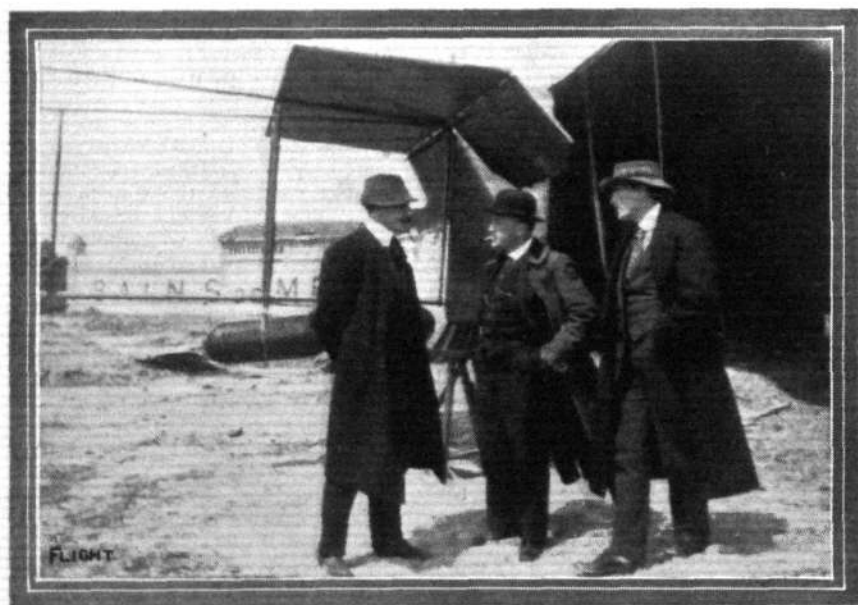
Two Other Attempts.

ONE minute after Audemars left Villacoublay, Letort started in a north-easterly direction. Unfortunately, however, he was forced to land between Liege and Brussels, and, in coming down, so badly damaged his machine that he could not go on. He had by that time covered about 300 kiloms.

Having given up the idea of flying across the Mediterranean, owing to the difficulty of getting everything favourable for this 800 kil. across-seas flight, Seguin decided to have a try for the Pommery Cup by flying back to Mourmelon. He determined that if he found the conditions all right to go on in the direction of Copenhagen. Starting from Marseilles, and accompanied by a passenger on his H. Farman biplane, he made a short stop near Dijon, and reached Mourmelon-le-Grand at half past two. Half an hour later he re-started, and reached Braine l'Allend in fine style. At 4 o'clock he was once more in the air, and eventually landed at Velaine, to the north of Namur, having covered 900 kiloms.

Vedrine and Gilbert Try Again.

OF the flights which were made on Wednesday, the two outstanding performances were those of Vedrine and Gilbert. The former on a Morane-Saulnier flew from Villacoublay to Lyon on Tuesday morning, and proposed to fly from Lyon to Edinburgh. He got away from Lyon at 4.39 a.m. on Wednesday, and flying by way of Nevers landed at Villacoublay at 7.57. Twenty-seven minutes later he was again progressing northward, but about ten o'clock he was overtaken by a storm near Rouen, and decided to give up. Gilbert, likewise on a Morane, started at 4.34 a.m., from Amberieu, intending to fly to Scotland. At 8.22 a.m. he landed at Corbeaulieu, near Compiègne. Some time after resuming he found the rain very troublesome, and eventually, when near Doullens, he came to the conclusion that it was futile to go on.



To go or not to go for the Marseilles-Algiers flight.—A consultation between Perreyon, the prospective passenger in the flight, Fischer, chief Farman pilot, and Seguin.

FOREIGN AVIATION NEWS.

Military Aviation in France.

AN order has been issued by the French Minister of War giving particulars of the new scheme for the organisation of the French Army Flying Corps. In future the various aeronautic units will be under the control of the military governors or commanders of army corps on the ground at which they are stationed. The duties of the Inspector-General of Aeronautics have also been rearranged, and in future he will not be concerned with the purchase of machines, but will deal with the technical inspection of *personnel* and *matériel*, and the technical questions regarding the training of pilots, &c.

A New Passenger Height Record.

ON Monday, Lieut. Broccard, of the Deperdussin centre at Rheims, made a new French height record for pilot and two passengers during a flight which lasted 1 hour and 35 mins., the height attained being 2,300 metres. The machine used was a Deperdussin monoplane, fitted with Gnome engine and Rapid propeller. The world's record stands at 3,580 metres, and to the credit of Lieut. Blaschke.

The Trans-Mediterranean Trip Postponed.

AFTER waiting from day to day for some weeks for a favourable opportunity to fly from Marseilles to Algiers, Seguin has definitely decided to postpone the attempt for the present. The four torpedo-boat destroyers which had been appointed by the French Naval Minister to patrol the Mediterranean during the attempt have been ordered back to Toulon.

Fast Flying by Bathiat.

ON Sunday, Bathiat, on his Bathiat-Sanchez monoplane, started from Mourmelon and flew to Peronne, a distance of 185 kiloms., in 1 hr. 7 mins. Later in the day he returned to Mourmelon in 1 hr. 20 mins.

Cross-Country Work on Farmans.

QUALIFYING for a superior *brevet*, Capt. Voisin, on a H. Farman biplane on the 25th ult., flew from Chalons Camp to Etampes. Lieut. de Gensac, on the same day, took an 80-h.p. H. Farman from Etampes to Buc, while Lieuts. Pierra and Halle, on similar machines, covered the circuit, Chalons, Mailly, and Sissonne Camps. Non-commissioned officers Marc and Corbeil flew from Etampes to Pithiviers and back.

Mr. Corbett Wilson at Buc.

DURING last week Mr. Corbett Wilson was at Buc, trying out his new 80-h.p. Blériot. On the 23rd ult., both he and Mrs. Wilson were taken for trial flights by Domenjoz. On the succeeding days he made several fine flights on the machine, occasionally being accompanied by Lieut. Loftus Bryan, and on Sunday the two were flying over Paris at a height of 1,200 metres.

Mme. de La Roche Flying Again.

AT Buc, on the 22nd ult., Henry Farman was testing a new school machine, on which he took his brother Maurice for a trip. Subsequently he gave a lesson to Mme de La Roche on the double control machine.

Fine Flying on Deperdussins.

FROM the Dep. School at Betheny, on the 23rd ult., Capt. Roissin made a round trip to Vouziers and Mailly Camp and back, while Lieut. Mortureux went to Mailly and Sissonne Camp and back. Lieut. Devienne arrived from Toul, and Lieut. Lalanne from Sissonne, while Lieut. Adrian went over to Mourmelon.

A Parseval Biplane.

TESTS have been recently carried out by the Parseval air-ship firm with an all-steel biplane fitted with a 100-h.p. motor. The machine is said to be exceptionally fast, and as soon as it has completed its trials it will be sent to Doeberitz to undergo official tests.

Spanish Officers see Bathiat Monoplane.

A PARTY of Spanish army officers headed by Captain Herrera visited Mourmelon on the 24th ult. and saw Bathiat fly the new Bathiat-Sanchez monoplane, fitted with a Clerget motor. They watched Lieut. Morel on one of these machines mount 1,500 metres in 7 mins., and they also witnessed delivery tests of two monoplanes piloted by Tetard and Labarre respectively.

An Escadrille of M. Farmans at Work.

ON the 23rd ult., an escadrille of Maurice Farman biplanes, piloted by Capt. St. Quentin, Lieuts. Battini, d'Abrantes, Grezeaud, Gignoux, and

Sergeant Quennehen flew, under orders, from Epinal to Chalons Camp, where they have been engaged in taking observations of artillery practice. The distance of 190 kils. was covered in 2 hrs. 20 mins.

Duval Tries for the Michelin Cup.

THE first attempt for the International Michelin Cup this season was made on the 24th ult., when Duval, flying a Deperdussin monoplane, fitted with 50-h.p. Clerget motor and Integral propeller, started to fly over a course from Etampes to Gidy, near Orleans and back, a distance of 108 kiloms. Under the rules a stop must be made on each round in order that the pilot may sign the control sheet. Starting from Etampes at 8 a.m., Duval made eight rounds of the course at an average speed of over 104 kiloms. an hour, and then decided to finish the day's work. He intended to continue his task on the following morning, but the gale that was then blowing rendered that out of the question, and so the first attempt stands to the credit of Duval, with 864 kiloms. He intends to make another trip at the first favourable opportunity.

Bosano's Attempt for the Jeton d'Or.

ONE of the prizes offered in France which is specially attractive to new pilots, is the Jeton d'Or, offered by M. Anzani, which is awarded for the best flight exceeding 500 kiloms. in a straight line, the winner securing 25 francs a day until his performance is bettered. An attempt for it was made, on the 22nd inst., by Bosano, on his Caudron biplane, which is fitted with a 40-h.p. 6-cyl. Anzani-motor. He started from Issy at 7 a.m., and an hour later landed at Chauny, whence, having replenished the fuel and oil tanks, he started for Brussels at 10 o'clock, and landed on the Etterbeek ground there at half-past twelve. At 5 p.m. he continued his journey in the direction of Holland, and eventually reached Haarlem, landing there after having covered 450 kiloms. from Issy. During the trip the engine used 72 litres of petrol and 14 litres of oil, which shows that it is well on the economical side.

Etampes to Chalons on Farmans.

TWO Henry Farman biplanes, intended for a new escadrille which is being formed at Chalons Camp, were flown over to that place from Etampes on April 23rd by Lieuts. Remy and Pierra.

Fatal Accidents.

TWO accidents which ended fatally, occurred at Johannisthal on the 24th ult. The first occurred to a Wright biplane, which was being piloted by Princess Schakowskaja, with her instructor Abramovitch as passenger. While the machine was about 30 ft. from the ground, the Princess apparently tried to make it rise too steeply with the result that it capsized. The pilot sustained slight injuries, while Abramovitch was so badly hurt that he succumbed during the night. About a quarter of an hour after this accident another Russian pilot, Dunetz, was making a very steep *vol pique*, when at a height of about 250 metres the wings of his monoplane collapsed, and he was killed on the spot. On the 22nd the monoplane of Lieut. Eblers fell from a height of 40 metres at the Doeberitz camp and the pilot was instantly killed.



Interested watchers in the proposed Marseilles - Algiers flight, — Mme. Seguin (mother of the pilot), Mdle. Seguin (sister), Mdme. Fischer, and Mrs. Holt Thomas.



Abramovitch, the famous Russian aviator, and Princess Schakowskaja, who, on a German-built Wright biplane, last week met with an accident at Johannisthal, Abramovitch being so badly injured that he afterwards succumbed. Princess Schakowskaja herself, also a well-known pilot and a pupil of Abramovitch, was at the time acting as pilot. She was not seriously hurt.

High Flying at Eastchurch.

A VERY fine flight was made by Engineer-Lieutenant E. F. Briggs, one of the flight commanders of the Naval Wing of the Royal Flying Corps, on Tuesday. Accompanied, on a Short biplane, by Assistant-Paymaster C. R. F. Noyes, he left Eastchurch in a north-west direction, in a very strong wind, and by the time the machine was over Sheerness Harbour, it had risen to a height of 9,850 feet. Then the carburettor began to freeze up, so necessitating a descent, and after manoeuvring over the Isle of Grain, a fine descent was made into the Naval flying ground after being in the air an hour and a quarter.

Wakefield-Harrogate Flight.

MR. HAROLD BLACKBURN, flying a new type 50-h.p. Blackburn monoplane, left on Tuesday, last week, the Yorkshire Aerodrome, near Wakefield, at 1.34 p.m., for Harrogate. When he reached Leeds he had the town on his left, and was then flying beautifully at an altitude of 2,000 ft. The machine was fitted with map and compass, and Mr. Blackburn made a perfect course for the Queen's Hotel, in front of the Stray, at Harrogate—the ground used for alighting in the Circuit of Britain. He had never been to Harrogate before, but he arrived exactly at the appointed place at 1.52, about the time expected. The distance is some 18 miles. When he arrived over the Stray, he was flying at all 4,000 ft. altitude, and made a very fine spiral glide down, landing just in front of the Queen's Hotel. The descent took 5 minutes.

Unfortunately when he was about to make the return journey, owing to the enormous crowd which had collected on the Stray, he had the misfortune to smash the machine before getting away. Mr. Blackburn was, however, not hurt in the slightest, although greatly disappointed, as this was his first smash.

Mr. Sydney Pickles in the Midlands.

DURING the visit of their Majesties the King and Queen to the Midlands, they were escorted part of the way from Crewe to the Potteries by Mr. Sydney Pickles, who during last week was flying on his British-built Blériot at Newcastle-under-Lyme. On April 20th, he was at Wolverhampton, and after making sundry adjustments to his machine, flew over to Newcastle, Staffs, and flying against a stiffish breeze, covered the 35 miles in 39 mins. On Tuesday, 22nd, he made eleven flights

Police Enquiries in Germany.

IT is stated that aeroplane manufacturers in Germany, particularly those in the west of the Empire, have been requested to furnish to the police authorities particulars as to the number of machines built and sold, descriptions of the machines delivered, and the name, profession, and address of the purchasers.

A Blériot in Switzerland.

HAVING arranged to fly at Aaran in the interest of the Swiss National Aviation Fund to which £16,000 has already been subscribed, Oscar Bider flew over from Berne on his Blériot tandem on the 22nd ult., in 45 mins.

Prince Axel has a Mishap.

AFTER making a flight of over an hour's duration at a height of 600 metres at Copenhagen on the 24th ult., Prince Axel, who is a nephew of Queen Alexandra, was in difficulties when landing owing to his biplane being caught by a sudden gust of wind. The machine crashed into a barrier and was badly broken up, but fortunately the pilot escaped unhurt.

Long Flights in Algeria.

FOLLOWING on the news which has already been published concerning the splendid work done by the escadrille of H. Farman biplanes in Algeria, come details of a fine performance on the 28th ult., when four machines, piloted respectively by Lieuts. Reimbert, Cheutin, Jolain and Sergt. Hurard, were flown from Biskra to Constantine, a distance of 260 kiloms., in 12 hrs. 30 mins. The machines were fitted with Gnome engines and Integral propellers.

The Airship Manœuvres at Cologne.

ONCE again the airship operations at Cologne have had to be interrupted. This time it is the P II, which was so badly injured during the week before last that she had to be dismantled and sent back to Bitterfeld for repairs. Meanwhile the Z II has made several trips to Dusseldorf and along the Rhine to Metz, &c.

during the day, and at 10.45 a.m. started off to meet the King, and accompanied the Royal procession for about the last 4 miles to Newcastle, swooping down to within 30 ft. of the ground wherever there was a vacant field, and circling round now and again so as not to get too far in advance of the Royal party. During the afternoon he made a number of exhibition flights before a large crowd of people, finishing up by two flights in the dusk, the ground being effectively illuminated by petrol torches. On the following day he made half a dozen flights, finishing one of them with a fine glide with engine stopped from a height of 5,000 ft. He also made three flights on the Thursday, when rain curtailed the proceedings.

The 60-80-h.p. Anzani motor which is fitted to the machine is giving splendid results, and Mr. Pickles tells us that it is as reliable as any car engine, and one great advantage is that it can use any mineral lubricating oil which is suitable for car engines. Although the machine is not excessively speedy, its climbing powers are exceptional, and it is an ideal machine for exhibition work.

Mr. Hewitt Flying at Rhyll.

ON Wednesday, of last week, Mr. Vivian Hewitt was up for over an hour on his Blériot, and did some fine spirals, finally landing on the sands. He had hoped to make another flight on Saturday, as it was the anniversary of his trip across the Irish sea, but the weather was too bad.

N.E.C. Developments.

HAVING removed from their former works at Acton Hill to new and larger works at Junction Works, Hythe Road, Willesden Junction, N.W., the New Engine Co., Ltd., in addition to general machine work and engine and motor car repairs, are greatly extending their wood-working department, a fact which may interest aeroplane constructors requiring quantities of parts.

Some Integral Successes.

IT is interesting to note that of the many outstanding cross-country flights which have been made during the past few days quite a number have been accomplished by the aid of the Integral propeller. Guillaux used an Integral when flying on his Clement-Bayard monoplane from Biarritz to Holland, Gilbert's Morane was so fitted, and so was the Blériot on which Hamel recently made his non-stop flight from Dover to Cologne.



Edited by V. E. JOHNSON, M.A.

The Recent Discussion on Hydro-Aeroplanes.

THE discussion on the above, held at St. Paul's Institute, Covent Garden, on April 24th, was of an extremely interesting character, and showed in the clearest manner the value of such an aid to progress. It is to be hoped that in the future more attention will be devoted to this line of both thought and work; during the winter session it surely should be possible to hold at least half a dozen such discussions on various topics, amongst which "propellers" is one that certainly should be included. We give below the main line of thought and suggestions followed by the writer in opening the discussion. The chief points, &c., in the discussion that followed will be dealt with next week. It is to be hoped that the discussion will not end here, but that some of our readers who have had experience with this type of model will send us along the results of their experience and any deductions they may have arrived at from them. It is the results of actual experiments that we want, not mere expressions of opinions, but the assembly of as large a collection of experimental data as possible on which to build the more scientific and accurate knowledge of the future. With these few introductory remarks we pass on to the subject-matter of the discussion, giving the main line of argument.

The Chief Difficulty.

The crux of the present problem is the almost insuperable difficulty of producing a *homogeneous* machine. We have aeroplanes on floats, and flying boats of the most diversified type, but we have not yet succeeded in producing a machine capable of rising and alighting successfully on a 6-ft. wave, let alone an Atlantic billow.

Part Played by Models.

So far, it would appear that builders of full-sized machines have made but little, if any, use of model research or experiment. Each has developed independently of the other. Comparing the two results we find that, apart from structural data, it does not appear that builders of full-sized machines know much more about hydro-aeroplanes as such than experimentalists with models. Our present knowledge of the principles could, in fact, have been gained with a properly conducted and carefully thought out series of experiments with models.

In both cases, under more or less favourable conditions, complete success has been obtained, but the rough water machine has yet to be invented and developed. The two greatest difficulties to be overcome are, of course, launching and alighting.

The Floats.

The answer to the above problem undoubtedly lies in the question of the floats, unless it be merely a question of building machines of 1,000 h.p. and upwards. It seems extremely problematical whether flat-bottomed floats can be used in really rough water. If the float be short, it will bump badly from wave to wave, which, apart from the damage and discomfort, cannot in itself much assist in the launching of the machine. Long floats with more or less sharply-pointed prows to cut through the waves appear to me to be necessary. Such floats would also have "steps" if they are to be employed to the best advantage.

Dimensional Relations.

We do not yet know the best dimensional relations to give any specified float. Obviously, the question of the buoyancy of certain solid figures and the weight of material contained in them is of importance. The sphere has maximum buoyancy compared to weight of material employed, but is useless as a float because it cannot either be driven through the water or caused to roll on its surface with any

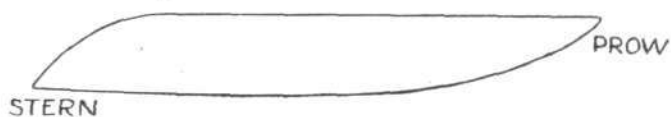


FIG. 1.

Section of float fitted to the model illustrated in last week's issue.

economy of power, as the writer knows from personal experience. Experiments are much needed, and if scientifically carried out would be of considerable value. Some recent floats (vertical section shown in Fig. 1), employed by the writer, have a length : breadth :

max. depth ratio as follow :—5 : 2 : 0.75. These have given good launching results even when very deeply immersed.

In the section shown in Fig. 1, it will be noticed the bigger end is towards the rear as is usual in the case of a more or less elongated body moving through water.

The Position of the Floats.

In considering this, one must carefully bear in mind the distinct difference between a machine on wheels and one on floats. In the latter case the upward pressure of the ground is, during the whole of the run, acting upwards through the same point, viz., the axle of the wheels. In the case of a hydroplane gliding over the surface of the water, these forces act as if they passed through a certain

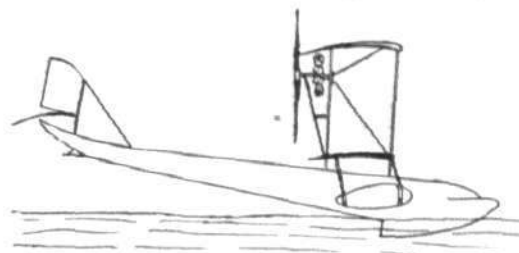


FIG. 2.

Diagrammatic sketch of a Donnet-Leveque type just prior to rising.

part in the immersed portion of the float which changes as the immersed part changes—for instance, as the machine (say of the Canard type and fitted with one long central float) increases its speed, and the float (set at a suitable angle of incidence) rises more and more out of the water, this part travels along the float more and more towards the stern.

In the case of a machine on wheels they are best arranged vertically below the centre of gravity of the machine, or rather slightly in advance of it, in order that the passage from launching to free flight may take place with as little disturbance as possible; similarly, in the case of a hydro-aeroplane, it should be arranged as far as possible that the water reaction on the portion of the immersed part of the float should be (at the moment of actual leaving the water) approximately below the centre of gravity (see Fig. 2), which clearly shows the utility of a step in such a case. If the machine be of the Canard type, and the rear of the float (the last to leave the water) be not too far behind the vertical through the centre of gravity, then, for this reason, a step is unnecessary.

Hydro Vanes.

When a hydroplane is at rest on the surface of the water, the forces which keep it in equilibrium are its weight, acting vertically downwards through the centre of gravity, and the upward so-called static pressure of the water acting vertically upwards through the same point brought into play by means of suitably disposed floats. During the period comprised between mere resting and the actual moment of quitting the water and definite flight—i.e. to say during the time of travel through the water prior to flight—the forces which produce equilibrium are three in number.

The first, the static pressure due to the actual displacement of the water by the floats. This passes from its maximum value (equal to the weight of the entire machine when at rest) to a value nothing when no part of the float remains in contact with the water.

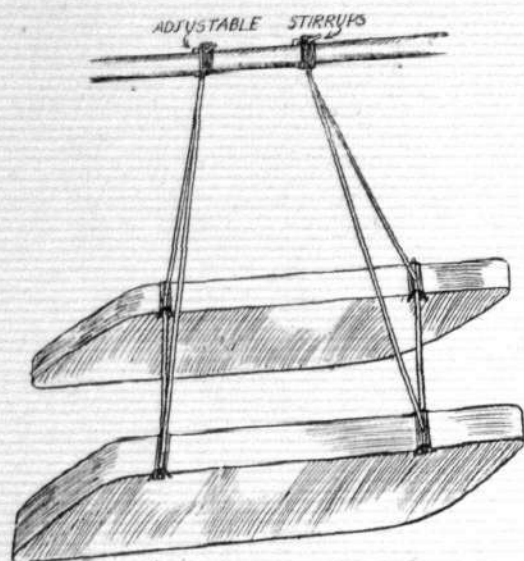
The second is the aerodynamic force due to the pressure of the air on the wings. This increases from zero when the machine is at rest until it reaches its maximum, a value equal to the entire weight of the machine when it finally quits the water (practically it is somewhat greater because the machine has to gain altitude and climb). Theoretically this force increases as the square of the speed.

The third, which exists only in the case of hydroplanes, &c., is not present in land machines, viz., the dynamic force due to the pressure exercised by the water on the bottoms of the floats provided that they have a suitable form or shape, and present a correct angle of incidence, as well as in the case of hydrovanes fitted to streamline bodies. This increases from zero when the machine is at rest, passes a certain maximum (of which the value and the instant—time—are extremely difficult to determine, and varies from one apparatus to another), finally falling again to zero at the moment

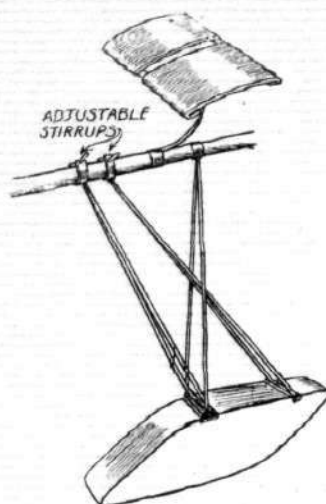
when the machine finally quits the water. Builders of hydro-aeroplanes scarcely seem to have paid sufficient attention to this last-named agency or force.

There is, nevertheless, one particular form in which this force can be employed in a very efficient manner, both in the water (as was shown by Forlanini, and also by Lieuts. A. Crocco and O. Ricaldoni) and in the air as shown by Philipps. [See FLIGHT, January 25th, 1913, page 98.]

With such an apparatus as this Forlanini was able to support a weight of 3.6 lbs. per 1.6 sq. ft. at 45 m.p.h.



Main floats and method of adjustable attachment on the Bragg-Smith hydro-aeroplane.



Front float—method of adjustable attachment and divided elevator on the Bragg-Smith hydro-aeroplane.

In the case of the Crocco-Ricaldoni experiments, the hull left the water entirely at 15 m.p.h., and a speed of 43.5 m.p.h. was obtained with a motor of 80 h.p., the weight carried being at the rate of 3½ lbs. per 1.6 sq. ft.

Much better results than have so far been obtained with flat-bottomed floats, stepped or unstepped. One must not forget that Fleming-Williams used a cigar-shaped body with a rear fin more than 18 months ago, and that this model was the first model to actually leave the surface of the water.

Further experiments are much needed with the Forlanini and Crocco-Ricaldoni type of float. Fabre we know tried it and gave it up, because he picked up undesirable objects from the French harbours, some of which have plenty of such, but that is no reason for giving up such a type. The hydrovanes would undoubtedly have to be extremely strong, and their angle of incidence in my opinion should be capable of alteration by means of a lever worked from the pilot's seat.

I believe myself that it is this type of float, combined with a body or bodies of streamline form, which is likely to be the type which will be found most suitable for waves and rough water.

Flotational Stability.

One of the most difficult problems is the question of flotational stability, and stability when in actual flight, combined with successful rising or alighting should the machine be caught by anything in the nature of a side gust. The former requires the setting apart of the floats as far as possible, the latter the nearer the better, more especially in a lateral sense. The better solution that I have to offer is twin floats of the catamaran type, whose flotational (lateral) base is from one-quarter to one-third the total span of the main plane, combined with wing tip balancers (made as light as possible), and clear of the water, to come into play only if the machine rolls; in the case of full-sized machines these could best be constructed of stout canvas or some such material—blown out—i.e., under pressure. I see no reason why during flight these could not be deflated, and therefore their resistance lessened. They should also be so fixed to the planes that they could be raised or lowered at least 3 ft. at the will of the pilot. In the case of models, i.e., light models under, say, a pound in weight, since it is most important to keep the moment of inertia of the machine about its three principal axes as small as possible, especially the one about the longitudinal axis, I think this is a case in which blown-out rubber tubing could be used with advantage. I have here a balancer-float made of veneer wood with cork ends, but I find it far too heavy. The instability of most model hydro-aeroplanes is generally due to the fact that they have too large moments

of inertia; every endeavour should be made to keep these to a minimum. Catamaran floats should be stepped for several reasons—less friction, i.e., resistance, &c., and because they enable the machine to take its proper attitude when on the point of flying, a matter otherwise difficult of attainment, especially if the machine be a tractor and the floats long, as they must be for rough water.

Conditions the Floats Should Fulfil.

The conditions which the floats should fulfil are:—

- (1) A flotational capacity sufficient to safely float the machine on the water when at rest, in rough weather as well as calm.
 - (2) A form or shape to permit of as quick a get-off from the water as possible.
 - (3) Minimum water and air resistance. The former to include the ability or capacity to cut through a wave when necessary.
 - (4) Minimum weight and maximum strength.
 - (5) Absolute watertightness.
 - (6) Support (if possible) at least their own weight in the air, i.e., not to be altogether inefficient in an aerodynamic sense, but the hydrodynamic value to have precedence.
 - (7) A capacity to withstand severe shocks from waves or a collision with the ordinary floating matter of the water on which they may be travelling and if possible an enforced descent on land.
 - (8) No tendency to dive.
- In the case of models, all the above conditions (save the last) have been fulfilled.

Landing.

This last concerns the "alighting" of the machine on the water after a flight, and is the last item with which I propose to deal.

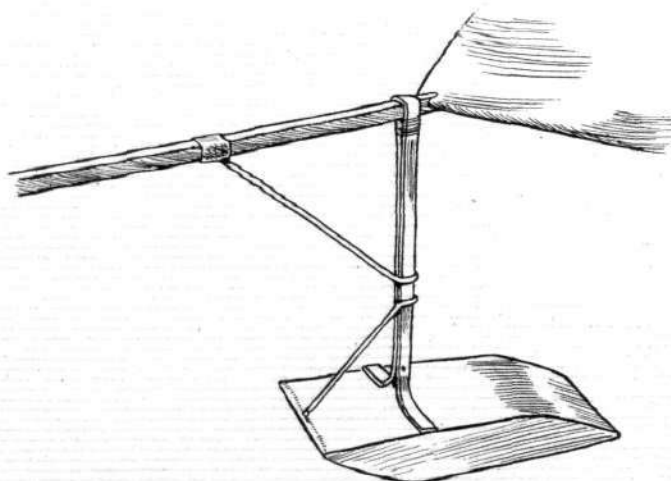
It is at this point or juncture that the model and the full-sized machine that have, practically speaking, so far journeyed with us together hand in hand part company. How should a machine alight on the

water? Evidently in exactly the same manner in which it arose from it, but in the reverse order.

Now a model cannot do this because it carries no pilot to "flatten out" at the right moment. It would appear, therefore, better to investigate this part of the problem separately by means of (heavy) models launched first at a fine angle of incidence, gradually increased.

With these remarks I now leave the matter to others—to either substantiate or criticise the views I have put forward, or to state other and very possibly much better views of their own.

(To be continued.)



Rear float and attachment on the Whitworth hydro-aeroplane (Olympia model).

Replies in Brief.

A. A. COLLINS; G. ENGLEFIELD; P. W. PEEL; A. B. COOK; S. T. SMITH; L. MINOT; P. H. WILKINSON.—Many thanks for your communications, which we shall be pleased to make use of in due course.

LIVERPOOL A.—Thanks very much for the float you sent us, but it is quite out of date here—far too heavy, and not of the best section; it is also very easily indented and very apt to leak.

H. K. MORRIS (Australia).—You will find your query fully answered in the recent April 5th and 12th issues.

KITE AND MODEL AEROPLANE ASSOCIATION.

Official Notices.

British Model Records.

Hand-launched ...	{ Distance ...	A. E. Woollard ...	477 yards.
	{ Duration ...	A. F. Houlberg ...	89 secs.
Off ground ...	{ Distance ...	G. Rowlands ...	232 yards.
	{ Duration ...	A. F. Houlberg ...	51 secs.
Hydro, off water ...	{ Duration ...	G. P. Bragg-Smith ...	25 secs.
Single-tractor screw, hand-launched ...	{ Distance ...	F. G. Hindsley ...	173 yards.
	{ Duration ...	J. E. Louch ...	44 secs.
Do., off ground ...	{ Duration ...	J. E. Louch ...	40 secs.

Hydro. Trials.—These trials had to be postponed on Saturday last on account of wind, and will be held to-day, Saturday, at 3 p.m., on The Rushmere, Wimbledon Common.

Affiliation.—The application of the Hendon and District Model Aero Club for affiliation has been granted. It is hoped by the council that other clubs will affiliate, as it is only by working together that the interests of all can be considered, and the association's object is to work with and for all interested in aeronautics.

Discussion.—An interesting meeting took place on Thursday, April 24th, at St. Paul's Institute, Covent Garden, when Mr. V. E. Johnson, M.A., opened a discussion on hydro-aeroplanes. The president, Sir John C. Shelley, was in the chair, supported by Mr. R. M. Balston, Major B. Baden Powell, Lieut.-Col. H. F. Smyth, and Mr. R. H. Stannard, who represented Lord Northcliffe. Major B. Baden-Powell proposed and Mr. Balston seconded that a vote of thanks be passed to Lord Northcliffe for the splendid prizes he had again offered for aviation. This vote was carried unanimously. A vote of thanks to the president was moved by Mr. Balston, who stated that with Sir John as president, the association, he believed, would have a good year, and carry out the work they wished to do. A vote of thanks to Mr. V. E. Johnson for the able way in which he opened the discussion closed the meeting.

The Association's Burgee for Kite Members can be had from the hon. sec., 15, post free. It is hoped all kite members will fly one, so that members visiting various districts shall know the members by burgee as well as by badge.

27, Victory Road, Wimbledon, S.W.

W. H. AKEHURST, Hon. Sec.



MODEL CLUB DIARY AND REPORTS.

CLUB reports of chief work done will be published monthly for the future. Secretaries' reports, to be included, must reach the Editor on the last Monday in each month.

Aero-Models Assoc. (N. Branch) (15, HIGHGATE AVENUE, N.).

DURATION competition and point-to-point race to-day at Finchley. Members are requested to be on the ground by 3 p.m. prompt to facilitate arrangements.

Bristol and West of England (Model Section) (3, ROYAL YORK CRESCENT, CLIFTON).

THE inter club hydro-aeroplane contest postponed until Whit. Monday. First heat at Portishead Marine Lake at 3.30 p.m. Programmes on application.

Monthly Report.—The annual general meeting was held on April 2nd, Mr. P. A. Thompson (Hon. Secretary Bristol Aero Club) in the chair. The chairman said that he had been very much struck by the keenness shown by the model section, and that the Aero Club regarded the section as a decided asset. He expected all present to become full members, and infuse new life into the club. He understood that hydro-aeroplane flights across the Atlantic were being proposed. He hoped that in view of the model hydro-aeroplane competition which was being arranged a member of the model section would make the first successful attempt. The *resumé* for 1912, which was read by the secretary, indicated very satisfactory progress. Messrs. R. V. Tivy and R. M. Haines were re-elected to fill the posts of secretary and assistant secretary, and Messrs. N. W. Edgar, R. T. Howse, A. E. Pearce and W. A. Smallcombe to serve on the committee. The accounts and balance sheet for 1912 were adopted. Mr. R. M. Haines offered to present a prize for the first flight of 10 secs. made by a model helicopter or ornithopter subject to certain conditions. The competition to be judged by two of the official observers. A vote of thanks to the chairman was carried with acclamation. A trial hydro-aeroplane meeting was held at the Zoological Gardens on April 5th. The wind was strong and extremely gusty. Mr. L. J. Jacques tested a well-constructed r.o.g. single tractor biplane of the BE2 type, but was unable to get good results—probably owing to the arrangement of the chassis and the inadequate resistance to "torque" afforded by the small span of a biplane. Mr. N. G. Stephens made several flights with a 10-oz. r.o.g. tail-first machine, which rose and flew in good style. Mr. W. A. Smallcombe flew an r.o.g. machine and tested a hydro-aeroplane (photos A and B). Weight $5\frac{1}{2}$ ozs. with loaded wing-tips. Mr. R. T. Howse made really excellent flights with a 6-oz. "Weiss" model (photo C). In every case the hydro-aeroplanes landed in trees, and the prize for duration was awarded to Mr. Howse for a flight of 10 secs.

Hendon and Districts Model Ae.C. (3, ARGYLE RD., W. HENDON)

MAY 4, at Cricklewood, 3 p.m. (weather permitting). Contest for hand-launched models; marks to be awarded for duration, distance, stability, altitude, &c. 1st prize, smoking cabinet; and, 2s. cash; 3rd, pair of carved propellers. May 25, Cricklewood ground, duration (r.o.g.) competition; three cash prizes offered.

Monthly Report.—The weather has not been too favourable during the past month, but on the few fine days which have occurred there has been a good turn-out of models. There is a noticeable improvement in the average flying, and general construction is receiving more attention than hitherto. Mr. H. Hills has been flying excellently two single-screw monoplanes. It is noticeable that a single-screw model will plane down at the end of a flight, thus scoring over a twin-screw machine, which, as a rule, merely "pancakes." Mr. F. Hayward has been flying a large 10-oz. model of the single-screw type. Messrs. Mitchell, Barton and Doidge have been out with models of 0-1-1-P2 type, altitude being a marked feature. Messrs. Hedges and Mitchell have been testing various models on the Cricklewood ground. Mr. Lawrence has been busy with a neat r.o.g. monoplane, also with a 1-1-0-P2 model, and Messrs. Dingley and Brown have been flying 1-1-P1 machines. The lighter evenings now afford some members the opportunity of testing machines throughout the week, and evening meetings will shortly be arranged. An application for affiliation has been sent to the K. and M.A.A.

Manchester Model Ae.C. (14, WARWICK RD. N., OLD TRAFFORD).

MEETINGS every Saturday, as usual, during the month, and as the days are now lengthening, it is hoped shortly to hold meetings during the week.

Monthly Report.—Owing to the high winds and rain flying has been out of the question on three Saturdays. Mr. Monteiro, however, has obtained good results with a Mann tractor, its climbing and *vol plans* being very good. He was also flying a Ding monoplane, which shows promise of being a good flyer. The prizes for the last meeting have been withheld, and they will be competed for to-day, if there are enough competitors, the competition being the best duration average for ten flights (hand-launched). It is hoped that during Whit-week plenty of work can be got through to make up for lost time through bad weather.

Paddington and Districts (77, SWINDERBY ROAD, WEMBLEY).

SATURDAY, May 3rd.—Another duration handicap, weather permitting.

Monthly Report.—The club's duration handicap competitions continue to be very popular amongst the members, which is not to be wondered at, as everyone, from the novice to the expert, stands a chance of winning a prize. Result of competition held April 12th: 1st prize (silver medal with gold centre), C. Levy, 62 points; 2nd prize (pair of carved propellers), T. Carter, 57 points; 3rd prize (1 doz. yds. $\frac{1}{2}$ strip rubber), H. Woolley, 52 points; H. Weston very close up with 52 points; C. C. Dutton, 50 points; W. Evans, 42; M. Levy, 39; F. Johnson, 38. On April 24th the members, as a result of affiliation to the K. and M.A.A., accepted an invitation to an aeronautical meeting and discussion on hydro-aeroplanes at St. Paul's Institute, Covent Garden. The discussion proved highly interesting and was greatly appreciated.

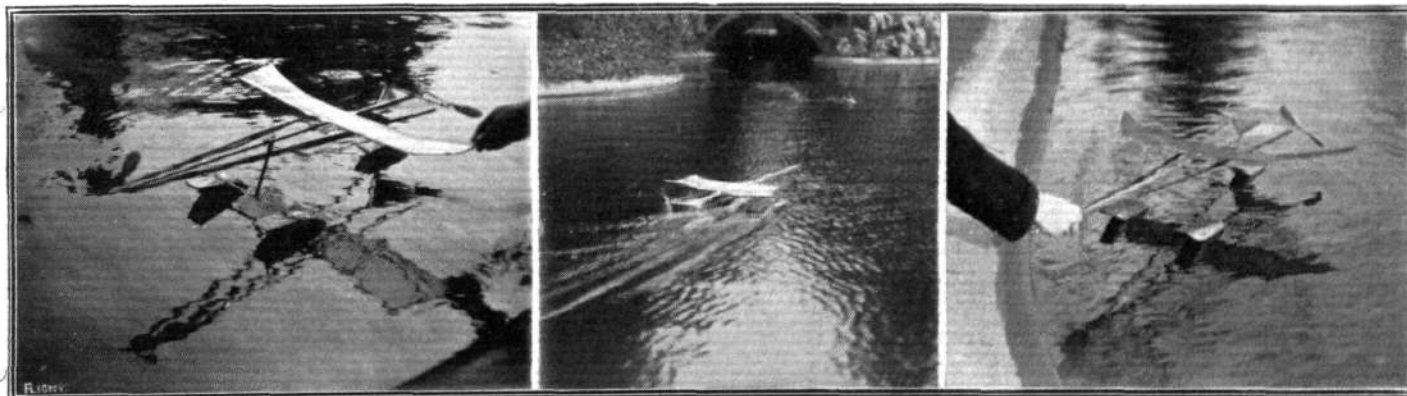
Reigate, Redhill and District (8, BRIGHTON ROAD, REDHILL).

Monthly Report.—The club has been quick to take advantage of the recent improved weather, and all members have been out. Much work is in hand for summer flying, and members are very busy in workshop. The competition for the Rawson cup was to have been held on Saturday, April 19th, but owing to high wind was postponed till May 3rd. Nevertheless, Messrs. Burghope, Hoyle and Norton flew monoplanes with perfect success. The outstanding successes of the month have been the new biplanes built for the cup, and a great deal of interest and care has been taken by members in designing and building these machines, many novel points being shown. The minimum weight is 8 ozs. Those built by Messrs. M. H. Wilson and Burghope have covered 210 and 307 yards, respectively. Mr. J. L. Sutton has been out with his usual variety of 1-1-P2 machines, including a 4-oz. r.o.g. mono. and $1\frac{1}{2}$ oz. and 3-oz. hand-launched 'buses. His 9-oz. biplane is a fast and stable flyer, and good results are expected. Mr. W. H. Norton has been getting 200-300 yds. out of 2-oz. models, which appear to possess extraordinary stability and a good measure of efficiency. He has also been testing his 9-oz. biplane, getting it off the ground first trial, obtaining very steady flights and splendid landings. Mr. M. H. Wilson has been tuning-up a fine 10-oz. biplane, doing over 200 yds. with ease. It rises at a fearsome speed, and flies very strongly. This in a nasty wind. Mr. W. Key has had his 8 $\frac{1}{2}$ -oz. biplane out, the first trial being a splendid spiral flight, ascending and descending in a spiral of about 20 yds. radius. Mr. N. H. Hooton making fine progress with hand-launched models, and also r.o.g. machines. He gets the $\frac{1}{4}$ -mile with ease out of a hand-launched mono. Mr. J. Hoyle's 6-oz. r.o.g. is a very pretty flyer, getting good flights off ground in high winds on 19th and 26th. Mr. A. Oram doing well with 4-oz. mono. in a wind. Mr. J. W. Burghope, on the 19th, got 380 yds. out of his 6-oz. r.o.g. mono. His new 9-oz. biplane is a really fine flyer, rising from the ground in 15 ft. down a 15-mile wind, and doing 310 yds. straight. He has also been out with Handley-Page Olympia machine getting short under-powered flights; promises well when in flying order.

Scottish Ae.C. ("ROCHELLE," LIMESIDE AVENUE, RUTHERGLEN).

Members will meet on Saturdays during May at Maxwell Park for experiments with hydros, tractors, &c. There will be no competitions this month.

Monthly Report.—During the past month weather here most unkind. The



A

B

C

Bristol and West of England Aero Club.

r.o.g. competition on 5th ult. had to be cancelled, as it was impossible to get models away. On 12th, at Maxwell Park, Mr. Donaldson was experimenting with a tractor hydro., and had little success; Mr. Balden had out his twin-tractor r.o.g., and had several successful flights, timing 16 secs. on several occasions. April 19th and 26th were idle days, owing to the weather. During month work progressing favourably in the workshop, and the committee intend instituting some new schemes to awaken interest in model work here. On Friday evening, 25th, the members met at the Institute to wish farewell to Mr. J. S. Gordon, who is leaving for West Africa. The chairman, Col. Sillars, with a few remarks, took the opportunity of presenting Mr. Gordon with a keepsake of some utility subscribed for by his comrades in the club. Mr. Gordon, in thanking the chairman, stated that he was taking some models with him to Africa, and would do his best to still further spread the science of model aeronautics.

Sheffield Model Aero Club (35, PENRHYN ROAD, SHEFFIELD).
The "Colver Cup" and Mr. Manton's Silver Medal for "tractor biplanes" will, weather permitting, be competed for on Saturday, May 3rd, at Sandhouse aerodrome. Intake, 3 p.m. Members please see special added rules in clubroom.

Monthly Report.—Owing to the state of the ground on Easter Monday the r.o.g. models did not fulfill the specifications for the "Colver Cup," nor was the Silver Medal won for "tractor biplanes" through the machines circling. After the close of the contests Mr. E. W. Colver announced a special event for the longest duration flight. Master C. E. Worrall proved the winner with a flight of 37 secs. April 14th a general meeting was held at the clubroom, Mr. E. W. Colver presiding. It was decided that monthly competitions should be held over until after Whitsuntide, when on that day the President's Challenge Cup for hydro-aeroplanes is to be competed for. To encourage the younger members it was decided to award a special prize each month for hand-launched duration models for novices. Also decided the subscription for hon. members to be 2s. 6d. per annum. Mr. W. H. Bagshaw brought down a $\frac{1}{2}$ scale model Blériot, together with plinth, which he had constructed in electro plate. Committee meetings will be held the first and second week each month.

S. Eastern Model Ae.C. (1, RAILWAY APPROACH, BROCKLEY).
During this week-end flying at Woolwich, Lee, Blackheath and Mitcham at usual times. At Blackheath, special attendance is requested at 10.45 a.m. for the purpose of having photographs taken of the club's members and models. On Monday, Thursday and Friday evenings next week flying at Brockley until dusk.

Monthly Report.—During the past few weeks the improved weather conditions have greatly facilitated the out-door experiments of the active members of the S.E.M.Ae.C., and many of them are going ahead with their waterplanes—which must also be capable of rising from and alighting on land—to be used in the first contest for the South Eastern trophy, the rules of which were published on page 450 of FLIGHT, April 19th. These rules have met with unqualified approval by the best known model waterplane flyers, and, judging by the interest already aroused, this competition will prove of exceptional value. The advance reports show that an unusually large selection of models and varied types of floats will be seen when the actual tests are held in June next, and visitors will undoubtedly be amply repaid for any slight trouble experienced in getting to the ground. One very interesting feature of last month's work was the splendid flying done by new large tractor monoplane constructed by Mr. G. H. Westwood and Mr. A. F. Chinnery. Both these models weigh about 16 ozs., and have made flights of 80 to 100 yards. The stability exhibited by Mr. Westwood's machine is remarkable, and the duration would do credit to many lighter models. Mr. F. Plummer has again been doing a large amount of careful experimenting with various models, including tractor monoplane, both of the r.o.g. and waterplane types, and considerable success has attended Mr. Plummer's work with an enclosed-body biplane. The difference in the flying compared with the same model with open fuselage is interesting. This member's "distance" and "duration" models have been very much in evidence, as have those machines flown by Dr. G. I. McMunn, who obtains considerable success with models fitted with "swept-back" wings. He has also been using the arrow-plane, i.e., a plane surface resembling those of Lieut. Dunn's automatic-stability biplane in plan view, but without the pronounced negative angle near the extremities of the wing. Members should not overlook the possibilities of this type of supporting surface, which is rapidly coming into use on the Continent. Mr. G. Brown has conducted some tests with a twin-tractor monoplane, and obtained good flights which were, however, all circular. The distinguishing feature of this model is an entirely new type of double-surface plane, and the remarkable efficiency shown has easily compensated the constructor for the trouble taken in the making. Mr. C. H. Morgan and Mr. G. R. Eland have done well with "racing" models; the former making flights of a $\frac{1}{2}$ -mile, and Mr. Eland's monoplane was doing duration flights in the neighbourhood of 60 secs. An interesting point in this machine is the placing of the rubber inside instead of outside the longitudinal members of the "A" frame. Mr. L. H. Slatter and Mr. W. J. Williams have done a considerable amount of fine flying with r.o.g. twin-screw models at Wimbledon, and Mr. Slatter has also been flying a tractor monoplane and his well-known hydro-aeroplane. With this model, flights of 30, 33, 38 and 52 secs. have been made after rising from the water; the best flight terminated with a glide of 17 secs. Mr. Slatter has also conducted some interesting tests on floatational stability. Mr. H. H. Groves had out his steam-driven biplane and monoplane, but the conditions were not favourable for extended flights, and Mr. S. E. Grimstone and Mr. R. W. Prance were flying a "floating tail" and a tractor mono. respectively. Mr. A. D. Nicholls, Mr. L. B. Morris and Mr. L. Hatfull with their tractor models, and Mr. F. Dixon and Mr. E. Campbell with twin-propeller monoplane have flown well. Mr. C. A. Rippon obtained some good flights with his large bamboo biplane, but the best flights made by this member were with a very efficient self-rising monoplane, numerous flights of over 40 secs. being made. Mr. B. Trask has been successful with an r.o.g. monoplane, but had the misfortune to lose a machine at the Lee aerodrome. At this ground Mr. W. A. McLaughlin and Mr. Barrett have repeatedly flown their single-propeller machines. Mr. W. G. Billingham has made a number of experiments with a tractor-hydro-monoplane. This machine arises from and alights on the water quite easily, but up to the present only short flights have been made; several modifications have been introduced and more extended flights may now be anticipated. Mr. Billingham's ordinary self-rising tractor monoplane has also been flown with fair success. The exhibition, which it was intended should have been held in May, has been postponed, as members are busily engaged on the construction of their models for the South Eastern Trophy Competition. The hon. sec., Mr. A. B. Clark, will be pleased to hear from anyone interested in model aviation, and full particulars of proposed visits to outlying districts will be gladly supplied if application be made to the above address.

The Croydon and District Branch (136A, HIGH STREET, CROYDON).

Monthly Report.—Much valuable work has been done during April, although the weather at times has not been favourable. Hydro-models seem to have received most attention, and Messrs. Carter, Smither, Young, Pavely, and Hart have been out with these models. Messrs. Pavely and Bell have been

most successful. Mr. Bell has had some flights, which for practically his first attempt at hydro-models, are a great credit to him. His model rises and alights with the utmost regularity. Several members are busy on new hydros, so there should be a good display of these models shortly. With r.o.g. models, Messrs. Young, Bell, Pavely, Smither and Hart have all had successful flights: Mr. Smither's latest r.o.g. model has made some magnificent flights at Sanderstead in the evenings. The weather now shows signs of improving, and the flying season is here. In view of these facts there seems to be a greater enthusiasm among members, which is a good sign for the future. The club intends to hold open competitions all through the summer, notices of which will be duly announced in FLIGHT from time to time.

Wimbledon and District Model Aero Club (59B, ST. PHILLIPS ROAD, LAVENDER HILL, S.W.).

FLYING on Saturday afternoon at 2.30. Sunday, 11 and 3, on the Plain on Wimbledon Common.

Monthly Report.—This club has recently been formed, and it is hoped that all in the district interested in model flying will become members. A good deal of flying has been done during the past month by members with all types of machines. Williams, Slatter and Laing have flown their r.o.g. monoplane, obtaining excellent durations. Powell, Easdale, Chown, Clements, Laing and Eads have all flown models launched by hand. Easdale has an interesting tractor; though less than 2 ft. long it has done over 30 secs. duration. Tucker has a large tractor which rises from the ground and flies 200 yds. Slatter, Chown and Easdale have out hydros, with varying success.

Windsor Model and Gliding Club (10, ALMA RD., WINDSOR).

Monthly Report.—Little or no model flying has been done this month, the members having all been occupied on the new glider. The club has been fortunate enough to acquire some workshops with a total floor space of about 1,200 sq. ft., so that it will be possible to erect the machine full size. For convenience of transport it has been made in three sections—a 6 ft. 6 in. middle section and two 9 ft. 6 in. end sections—making a total span of 25 ft. The chord and gap is 4 ft. 6 in. The control is by interconnected ailerons, with rudder and rear elevator. The ailerons and elevator are controlled by universal lever, and the rudder by a foot-bar. The planes have been built with an 18-in. flexible trailing-edge. The ribs are of T-section, very strong and light. Some very novel sheet-steel fittings have been designed and made by Mr. G. Petit, the section joints being extremely creditable. The chassis is of ash, with two rubber-sprung 24-in. wheels. An aluminium bucket-seat is being fitted. The ailerons are hinged to the rear spar, the control wire to be carried by pulleys. Excepting the chassis, the material used throughout is spruce. Estimating the weight of the machine as 75 lbs., and the pilot as 150 lbs., the glider will be loaded about 1 lb. per sq. ft., as there is 225 sq. ft. of supporting surface. It is to be single-surfaced, with the main spars covered in underneath. The club have applied for permission to exhibit it at the Royal Counties Show in June, and it is hoped that it will be granted. As the club is taking up the more practical side of aviation, it is hoped that any enthusiasts in the locality not yet members will shortly become so. Apply to the secretaries, S. Camm and S. Barton, as above.

Yorkshire Ae.C. (Model Sec.) (53, WEST STREET, LEEDS).

MAY 3RD.—Members giving flying exhibition at Bramley Carnival, near Leeds, in afternoon and evening.



PUBLICATIONS RECEIVED.

Annual Report of the Smithsonian Institution, 1911. Washington: The Smithsonian Institution.

Marching or Flying by Day and Night without a Compass. By Lieut.-Col. W. A. Tilney (17th Lancers). London: Hugh Rees, Ltd., 5, Regent Street, S.W. Price 1s. net.



Aeronautical Patents Published.

Applied for in 1912.

Published May 1st, 1913.

- 483. W. J. WILSON. Airships or aeroplanes.
- 8,522. J. J. MAYROW. Apparatus for aviation.
- 18,178. A. VON KEISSLER. Anchors or brakes for flying machines.
- 26,911. H. COANDA. Aeroplanes.
- 29,008. F. SOMMER. Landing and starting device for flying machines.

Applied for in 1913.

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- 4,830. LUFTSCHIFFSANTRIEB. Sheds for air-ships, balloons and aeroplanes.

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